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Young, Daniel

Y O U N G ' S

DEMONSTRATIVE TRANSLATION

OF

SCIENTIFIC SECRETS ;

OR

A COLLECTION OF ABOVE

500 USEFUL RECEIPTS

ON A VARIETY OF SUBJECTS.

T O R O N T O :

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Entered, according to Act of Provincial Legislature, in the year
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By DANIEL YOUNG,
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INTRODUCTION.

The object of the present work is clearly announced in its title. It is to collect within a small compass the instructions of experimental knowledge upon a great variety of subjects which relate to the present interests of man. It contains above five hundred genuine and practical receipts, which have been compiled by the publisher with extreme difficulty and expense. A reference to the list of subjects which the work contains, will show that the publisher's researches have been extensive, while a comparison of the work with others of the same general character evinces patient labour, and cannot fail to give it pre-eminence. While the track pursued is not new, it is more thorough, and more easily followed than that marked out by any previous compiler known to myself. The work contains not

merely the outlines on the subjects to which it refers, but, what appears to my own mind one of its excellences, the full and clear explanations of these subjects. To all classes of people, without exception, the work is of great value. It is fit, on every account, that the publisher should be encouraged in this production. The work is worthy the acceptance of all, and one which every man may prize.

ERRATA :

Page 117, and seventh line from top, and page 60, third line from bottom, says—tin or silver foil, they should be silver leaf.

DEMONSTRATIVE TRANSLATION

OF

SCIENTIFIC SECRETS.

1. ORIENTAL PAINTING.

Any bunch of roses or flowers, or any thing of the kind that you admire, take the pattern of by placing them against a light of window-glass, then lay a piece of white paper over them, and through the latter you will see the roses, &c. Now with a lead pencil take the pattern of the roses, &c., on the paper; when you have them all marked, cut them out with a scissors, so that you have a complete pattern of them. Now take a piece of glass, whatever size your pattern requires, stick the pattern on it with wafers, then paint the glass all over, except where the pattern covers, with black paint, composed of refined lampblack, black enamel, copel varnish and turpentine, mixed. Now let this dry,

then take off your patterns and paint your roses, flowers, &c., with tube paints, mixed with demar varnish, so that your roses, &c., may be, in a manner, transparent. Paint your large roses red, some of the smaller ones yellow, or any colour to suit your taste. Paint one side of the leaves a darker shade of green than the other, which will make the picture appear as though the sun was shining on it. When this painting is dry, take silver or gold foil, (gold is best,) wrinkle it up in your hand, then nearly straighten it, and cover the back of the glass all over with it; over the large roses let the wrinkles be larger, over the small ones smaller, &c.; then lay a piece of stiff paper, the size of the glass, over the foil, and a piece of very thin board again over this; have it framed in this manner and it is completed. You now have one of the richest of paintings, which is commonly taught at a cost of \$5. You may buy all you require for this painting at the druggist's.

2. TRANSFER PAINTING ON GLASS.

This is for transferring any picture plate you please to glass, to be framed. First give the glass a coat of demar varnish; let it remain for

eight hours, or until dry ; at this time have your picture thoroughly soaked in warm water ; then give the glass another coat of demar varnish, and take the picture out of the water ; then let it and the glass remain for twenty minutes, by which time the water will be struck in from the face of the picture, after which you will place the front of the picture on the varnished glass, (avoiding wrinkles and spots of water,) press it well on until every part is stuck fast, then carefully rub the paper all away to a mere film ; give the glass then, over this film, another coat of demar varnish, which will make the film transparent ; let it dry ; then place the glass, with the varnished side towards you, between you and the light, and you will see the outlines of the picture quite distinctly ; you may then paint on the back with tube paints, mixed with a little demar varnish to assist in drying, to suit your taste. For instance, if the picture is that of a lady, you may paint the dress red, the shawl or cape, as it may be, blue, the face flesh colour, (which colour may be made by mixing a little red with white,) the bonnet scarlet, the shoes black ; if there is to be a sky colour have it a sky blue, if trees, have them green, &c. All you want for this painting you may also buy at the druggist's. This

painting is very simple and elegant, it is commonly taught at a cost of \$3. Try it, you cannot fail.

3. TRANSFER VARNISH.

Take of Canada balsam 3 drachms ; gum sandric 3 drachms ; spirits of wine $\frac{1}{2}$ pint. Dissolve the balsam and gum in the spirits of wine and it is ready for use.

4. WHITE SPIRIT VARNISH.—THE VERY BEST.

Take of gum sandrack 4 ounces ; mastic 1 ounce ; Elmi rosin $\frac{1}{2}$ ounce ; Venice turpentine 1 ounce ; alcohol 15 ounces. Digest in a bottle, frequently shaking, till the gums are dissolved, and it is then ready for use.

5. TRANSFER PAINTING ON WOOD.

By this you may transfer any picture you please from paper to a cutter back, or any other substance you please. Give the board three coats of white spirit varnish, receipt No. 4 ; damp the back of the print with strong vinegar ; give the front a

very heavy coat of the transfer varnish, receipt No. 3; then press it on the board, avoiding creases; when perfectly dry and fast, rub the paper away; the print is indelibly fixed; then varnish it over as you would any other painting. This receipt has been commonly sold for \$5.

6. ELECTRO GOLD PLATING.—NEW METHOD.

Take 100 grams of laminated gold, mixed with 20 grams of hydrochloric acid; 10 grams of nitric acid; the liquid thus composed is placed over a moderate fire, and stirred constantly until the gold passes into the state of chlorine; it is then allowed to cool. A second liquid is formed by dissolving 60 grams of cyanide of potassium in 80 grams of distilled waters; the two liquids are mixed together in a decanter and stirred for 20 minutes, and then filtered. Finally 100 grams of whiting, dry and sifted, are mixed with 5 grams of pulverised super-tartrate of potass; this new powder is dissolved in a portion of the above described liquid, in sufficient quantity to form a paste of the proper consistency to be spread with a pencil on the article or part to be gilded. The superabundant powder is then removed by washing, and the article is beautifully

gilded with a heavy or light coat, according to the quantity of paste used. Grams belong to French weights, four grams are a little more than one drachm.

7. ELECTRO SILVERING.—NEW METHOD.

10 grams of nitrate of silver are dissolved in 50 grams of distilled water; then 25 grams of cyanide of potassium in 50 grams of distilled water; the two liquids are mixed in a decanter, and stirred for 10 minutes; it is then filtered. Finally, 100 grams of sifted whiting are mixed with 10 grams of pulverised supertartrate of potass and one gram of mercury. This powder and dissolving liquid are used in the same manner as in the above method of gold plating. These excellent methods of silvering and gilding were discovered in June, 1860, by the great French chemist Baldooshong of Paris, France. It is far superior to any other method ever discovered, and will eventually take the place of all.

8. ELECTRO GOLD PLATING.—USUAL METHOD.

Take a \$2 50c. piece of gold, and put it into a

mixture of 1 ounce of nitric and 4 ounces of muriatic acids, (glass vessels only are to be used in this work,) when it is all cut dissolve $\frac{1}{2}$ an ounce of sulphate of potash in one pint of pure rain water, and mix with the gold solution, stirring well; then let it stand and the gold will be thrown down; then pour off the acid fluid, and wash the gold in two or three waters, or until no acid is tasted by touching the tongue to the gold. Now dissolve one ounce of cyanuret of potassium in one pint of pure rain water, to which add the gold, and it is ready to use. Clean the article to be plated from all dirt and grease with whiting and a good brush; if there are cracks it may be necessary to put the article in a solution of caustic potash. At all events every particle of dirt and grease must be removed; then suspend the article in the cyanuret of gold solution, with a small strip of zinc cut about the width of a common knitting needle, hooking the top over a stick which will reach across the top of the vessel or bottle holding the solution. If the zinc is too large the deposit will be made so fast that it will scale off. The slower the plating goes on the better, and this is arranged by the size of the zinc used. When not using the plating fluid keep it well

corked and it is always ready to use, bearing in mind that it is poison as arsenic, and must be put high out of the way of children, and labelled poison, although you need have no fear in using it; yet accidents might arise if its nature were not known.

9. ELECTRO SILVERING.—USUAL METHOD.

This is done every way the same as gold plating (using coin) except that rock salt is used instead of the cyanuret of potassium to hold the silver in solution for use, and when it is of the proper strength of salt it has a thick curdy appearance, or you can add salt until the silver will deposit on the article to be plated, which is all that is required. No hesitation need be felt in trying these receipts, as they are obtained from a genuine source, and are in every day use.

10. GOLD PLATING FLUID.

Warm six ounces of pure rain water, and dissolve in it 2 ounces of cyanide of potassium, then add a $\frac{1}{4}$ ounce oxide of gold; the solution will at first be yellowish, but will soon subside to white;

then half fill a bottle with whiting, fill it up with this solution, and shake it well; you may now take a piece of old cotton, wet it with the solution, rub it well over brass, copper, &c., and it is nicely washed with gold.

11. SILVER PLATING FLUID.

Dissolve one ounce of nitrate of silver, in crystal, in 12 ounces of soft water; then dissolve in the water two ounces cyanuret of potash; shake the whole together and let it stand until it becomes clear. Have ready some $\frac{1}{2}$ ounce vials, and fill them half full of whiting, then fill up the bottles and it is ready for use. The whiting does not increase the coating powder—it only helps to clear the articles and save the silver fluid by half filling the bottles. The above quantity of materials will cost about \$1.62c., so that the fluid will be about 3 cents a bottle. It is used in the same way as the gold plating fluid.

12. QUICKSILVER PLATING FLUID.

Take of quicksilver one ounce, one ounce nitric acid, one ten cent piece, rain water $\frac{1}{2}$ pint to a

pint, put the three first articles into a tumbler together; let them stand until all dissolved, occasionally stirring, then add the water, and it is ready for use. This is used in the same way as the silver and gold plating fluid.

13. TO GILD STEEL.

Pour some of the ethereal solution of gold into a wine-glass, and dip into it the blade of a new penknife, lancet, razor, &c., withdraw the instrument and allow the ether to evaporate, the blade will then be found covered with a beautiful coat of gold; the blade may be moistened with a clean rag or a small piece of very dry sponge dipped into the ether, and the same effect will be produced.

14. TO GILD COPPER, BRASS, &c.—BY AN AMALGAM.

The gilding of these inferior metals and alloys of them is effected by the assistance of mercury with which the gold is amalgamated. The mercury is evaporated while the gold is fixed by the application of heat, the whole is then burnished

or left mat in the whole or in part, according as required.

15. GILDING GLASS AND PORCELAIN.

Dissolve in boiling linseed oil an equal weight either of copal or amber, and add as much oil of turpentine as will enable you to apply the compound or size thus formed as thin as possible to the parts of the glass intended to be gilt; the glass is to be placed in a stove till it is so warm as almost to burn the fingers when handled. At this temperature the size becomes adhesive, and a piece of leaf gold applied in the usual way will immediately stick. Sweep off the superfluous portions of the leaf, and when quite cold it may be burnished, taking care to interpose a piece of india paper between the gold and the burnisher. It sometimes happens when the varnish is not very good that by repeated washing the gold wears off; on this account the practice of burning it in is sometimes had recourse to; for this purpose some gold-powder is ground with borax, and in this state applied to the clean surface of the glass by a camel hair pencil; when quite dry the glass is put into a stove, heated to about the

temperature of an annealing oven, the gum burns off; and the borax, by vitrifying, cements the gold with great firmness to the glass, after which it may be burnished.

The gilding upon porcelain is in like manner fixed by heat and the use of borax, and this kind of ware, being neither transparent nor liable to soften, and thus to be injured in its form in a low red heat, is free from the risk and injury which the finer and more fusible kinds of glass are apt to sustain from such treatment. Porcelain and other wares may be platinized, silvered, tinned, or bronzed, in a similar manner.

16. GILDING THE EDGES OF PAPER.

The edges of the leaves of books and letter paper are gilded whilst in a horizontal position in the bookbinder's press or some arrangement of the same nature, by first applying a composition formed of four parts of Armenian-bole and one of candied sugar, ground together with water to a proper consistence, and laid on by a brush with the white of an egg. This coating, when nearly dry is smoothed by the burnisher, it is then slightly

moistened by a sponge dipped in clean water and squeezed in the hand ; the gold leaf is now taken up on a piece of cotton from the leathern cushion and applied on the moistened surface ; when dry it is to be burnished by rubbing the burnisher over it repeatedly from end to end, taking care not to wound the surface by the point.

17. PROFESSOR WORTS' AMALGAM FOR SILVERING.

This is the only means yet discovered for silvering iron directly, yet it is not so lasting as some of the other processes. Take quicksilver and the metal potassium, equal parts by volume, put them together in a tumbler, and if both metals be good there will be a brisk ebullition, which continues until an amalgam of the two is formed, then add as much quicksilver as there is of the amalgam ; let it work till thoroughly mixed, and it is ready for use. This amalgam you may apply with a cloth to any metal, even iron, though it be a rusty bar, and you have it neatly silvered over.

18. FOR COPPERING IRON.

This is the latest method, and that now in use.

To a solution of sulphate of copper, add a solution of ferrocyanide of pottasium, so long as a precipitate continues to be formed. This is allowed to settle, and the clear liquor being decanted the vessel is filled with water, and when the precipitate settles the liquor is again decanted, and continue to repeat these washings until the sulphate of potash is washed quite out; this is known by adding a little chloride of barium to a small quantity of the washings, and when there is no white precipitate formed by this test, the precipitate is sufficiently washed. A solution of cyanide of potassium is now added to this precipitate until it is dissolved, during which process the solution becomes warm by the chemical re-action which takes place. The solution is filtered, and allowed to repose all night. If the solution of cyanide of potassium that is used is strong, the greater portion of the ferrocyanide of potassium crystallises in the solution, and may be collected and preserved for use again. If the solution of cyanide of potassium used to dissolve the precipitate is dilute, it will be necessary to condense the liquor by evaporation to obtain the yellow prussiate in crystals. The remaining solution is the coppering solution; should it not be convenient to separate the yellow prussiate by

crystallization, the presence of that salt in the solution does not deteriorate it nor interfere with its power of depositing copper.

19. PECULIARITIES IN WORKING CYANIDE OF COPPER SOLUTION.

The true composition of the salts thus formed by copper and cyanide of potassium has not yet been determined, but their relations to the battery and electrolyzation are peculiar. The solution must be worked at a heat not less than from 150° to 200° Farenheit, (that is, not quite as hot as boiling water, which is 212° Farenheit.) All other solutions we have tried follow the laws, that if the electricity is so strong as to cause gas to be evolved at the electrode, the metal will be deposited in a sandy or powdered state, but the solution of cyanide of copper and potassium is an exception to these laws, as there is no reguline deposit obtained unless gas is freely evolved from the surface of the article upon which the deposit is taking place. As this solution is used hot, a considerable evaporation takes place, which requires that additions be made to the solution from time to time. If water alone be used for this purpose

it will precipitate a great quantity of the copper as a white powder, but this is prevented by dissolving a little cyanide of potassium in the water at the rate of about 4 ounces to the gallon. The vessels used in factories for this solution are generally of copper, which are heated over a flue or in a sand-bath, the vessel itself serving as the positive electrode of the battery; but any vessel will suit if a copper electrode is employed when the vessel is not of copper.

20. PREPARATION OF IRON FOR COATING WITH COPPER.

When it is required to cover an iron article with copper, it is first steeped in hot caustic potash or soda to remove any grease or oil. Being washed from that it is placed for a short time in diluted sulphuric acid, consisting of about one part of acid to 16 parts of water, which removes any oxide that may exist. It is then washed in water and scoured with sand till the surface is perfectly clean, and finally attached to the battery and immersed in the cyanide solution. All this must be done with dispatch so as to prevent the iron from combining with oxygen. An immersion of five minutes dura-

tion in the cyanide solution is sufficient to deposit upon the iron a film of copper, but it is necessary to the complete protection of the iron that it should have a considerably thick coating, and, as the cyanide process is expensive, it is preferable when the iron has received a film of copper by the cyanide solution, to take it out, wash it in water, and attach it to a simple cell or weak battery, and put it into a solution of sulphate of copper. If there is any part not sufficiently covered with copper by the cyanide solution, the sulphate will make these parts of a dark colour, which a touch of the finger will remove. When such is the case, the article must be taken out, scoured, and put again into the cyanide solution till perfectly covered. A little practice will render this very easy. The sulphate solution for covering iron should be prepared by adding to it by degrees a little caustic potash, so long as the precipitate formed is re-dissolved. This neutralizes a great portion of the sulphuric acid, and thus the iron is not so readily acted upon. When the iron is thus coppered, proceed to silver it in the manner recommended for silvering according to receipt No. 9; or if you want to put a very heavy coating of silver on it, make use of a strong battery.

21. SOLDERING FLUID.

For mending articles of tin, iron, zinc, copper, and almost all other metals. Take 2 fl. ounces of muriatic acid, add zinc till bubbles cease to rise, add $\frac{1}{2}$ a teaspoonful of sal ammoniac and 2 ounces of water. Damp the part you wish to solder with this fluid, lay on a small piece of lead, and with a piece of hot iron or soldering iron solder the part..

22. SOLDER FOR TIN.

Take of pewter 4 parts, tin 1 part, bismuth 1 part; melt them together. Resin is used with this solder.

23. COLD METHOD OF SILVERING IRON WITH SILVER-PLATE.

Polish the iron you wish to silver, then damp it over with soldering fluid (receipt No. 21.) When this is done give it a coat of No. 22 solder. This is done by laying a piece of cold solder on the iron, and spreading it over with a heated soldering iron, when by this means you get the iron nicely

plated with solder, then lay on your silver-plate evenly, and gently rub it over with the heated soldering iron, and it will become firmly united with the solder as the solder is with the iron, so that you have the iron beautifully plated with silver with very little cost or trouble.

24. HOT METHOD OF SILVERING IRON WITH SILVER-PLATE.

First polish the iron you wish to silver, wet it well over with No. 21 soldering fluid; then having procured that kind of silver-plate which is tin on one side and silver on the other, place it evenly on, with the tined side next the iron, then place it on the fire until the silver-plate melts down, then at once take it from the fire, and it will be firmly attached to the iron, and will be an excellent plate; yet No. 23, the cold method, is to be preferred in most cases.

25. SILVERING LOOKING-GLASSES WITH QUICKSILVER.

Take a piece of marble or some other substance very smooth, true, and level, lay on this the glass

you wish to silver, then make a ridge of putty on the marble against the edge of the glass all round it, so that you can pour quicksilver on the glass until it is all covered over, and will be prevented from running off by the ridge of putty; an inch, or two, or three outside this ridge make another of putty; then cover the quicksilver on the glass all over with tin-foil; next take a flat smooth article just the size of your glass, lay it over the tin-foil, and press it firmly but cautiously against the glass until you have squeezed out all the quicksilver you can. While you press this you may remove part of the first ridge of putty to give the quicksilver a chance to escape. When it is well pressed against the glass there will be an amalgam formed of the tin-foil and quicksilver that is left, which will firmly adhere to the glass. By this means you will have a very beautiful and cheap looking-glass; the quicksilver that escapes, being saved by the second ridge of putty, may be used again.

26. SILVERING LOOKING-GLASSES WITH PURE SILVER.

Prepare a mixture of 3 grains of ammonia, 60 grains of nitrate of silver, 90 minims of spirits of

wine, 90 minims of water; when the nitrate of silver is dissolved, filter the liquid and add a small quantity of sugar (15 grains) dissolved in $1\frac{1}{2}$ oz. of water, and $1\frac{1}{2}$ oz. of spirits of wine. Put the glass into this mixture, having one side covered with varnish, gum, or some substance to prevent the silver being attached to it. Let it remain for a few days and you have a most elegant looking-glass, yet it is far more costly than the quicksilver.

27. PATENT BURNING FLUID.

To 1 gallon of 95 per cent. alcohol, add 1 quart of camphene oil; mix and shake well, and if transparent it is fit for use, if not, add sufficient alcohol, shaking well, to bring it to the natural colour of the alcohol. It may be coloured to suit the fancy by adding a little tincture of golden seal, or any other coloring drug. This receipt has been sold for \$10.

28. BURNING FLUID.

Take 4 quarts alcohol, and 1 quart spirits of turpentine; mix well together, and it is ready for use.

29. NON-EXPLOSIVE BURNING FLUID.

Take 1 gallon 44 proof alcohol, 1 quart camphene, 3oz. of alum pulverised, $\frac{1}{2}$ oz. camphor gum, 65 drops cuicuma; mix all together and let it stand for 12 hours, and it is ready for use.

30. VINEGAR IN THREE DAYS WITHOUT DRUGS.

Take 2 barrels and saw one of them in two in the centre, and put one-half on the top, and the other at the bottom of the whole barrel, (or you may use three whole barrels if you like.) The middle barrel is to be filled with maple, beech, or baswood shavings, which are to be planed from the edge of boards only two or three feet long, which allows the shavings to roll, and prevents them from packing tight, and also allows air to circulate through them, which is admitted through a number of inch holes, which are to be made near the bottom of the barrel and just above the faucet, which lets the vinegar run into the tub below. The top tub has its bottom pierced with small bit holes, having several threads of twine hanging in them to conduct the vinegar evenly over the

top of the shavings in the middle of the barrel. Air must be permitted to pass out between the top tub and barrel, which comes in at the holes in the bottom. The shavings which fill the barrel must be soaked three or four days in good vinegar before they are put in. When thus arranged, for every gallon of water use $\frac{1}{2}$ lb. of sugar; (that you get from molasses barrels does very well.) If you wish to make vinegar from whiskey, put in 4 gallons of water to 1 gallon of whiskey; and if from cider, put in one-third water, and fill the top tub with this fluid, putting 1 pint good yeast to each barrel making; and have the holes with threads or twine so arranged that it will run through every twelve hours; and dip or pump up with a wooden pump every night or morning, and three days will make good substantial vinegar, which will keep and also improve by age. Some use only 1 gallon of whiskey to 7 gallons of water. This accounts for so much poor vinegar. Make good vinegar, it will pay you. If a few gallons of the water is made boiling hot so as to warm the whole of a gentle warmth, it will make faster than if used cold. This must be done in cool weather, and the room also should be kept warm. For families, small kegs will do, but for

manufacturers large casks are best. Many make vinegar by just putting fluid into the barrels of shavings, soaked as directed above, and do not let it run through, but let it stand in the shavings till sour; but it does not work fast enough for manufacturers. It will do where only a small amount is needed, keeping the same strength of fluid as for the other plan, which is best. Two or three years ago this receipt was sold for from \$50 to \$150. If vinegar is made from whiskey, it will have a more beautiful color if 5 or 6 lbs. of sugar is put into each barrel, of course keeping the same proportions of water as though only one kind was used. The shavings will last the whole season.

31. CUBA HONEY.

Good brown sugar 11lbs., water 1 quart, old bee honey in the comb 2lbs., cream tartar 50 grains, gum arabic 1oz., oil of peppermint 5 drops oil of rose 2 drops, mix and boil two or three minutes and remove from the fire, have ready strained one quart of water, in which a table-spoonful of pulverized slippery elm bark has stood sufficiently long to make it ropy and thick like honey, mix this into the kettle with egg well

beat up, skim well in a few minutes, and when a little cool, add two pounds of nice strained bees' honey, and then strain the whole, and you will have not only an article which looks and tastes like honey, but which possesses all its medicinal properties. It has been shipped in large quantities under the name of Cuba honey. It will keep fresh and nice for any length of time if properly covered.

32. EXCELLENT HONEY.

Take 5 lbs. of good common sugar, two pounds of water, gradually bring to a boil, skimming well, when cool add 1lb. bees' honey, and 4 drops of peppermint. If you desire a better article use white sugar and $\frac{1}{2}$ lb. less water, and one half pound more honey.

33. GUNPOWDER.

Take pulverized saltpetre, moisten it, and subject it to the action of a slow fire until completely dried and granulated, of this take 75 parts, purified sugar 12 and a-half parts, moisten and grind together till completely blended, which will require several hours, pulverize on heaters till dried.

34. EXCELLENT MATCHES.

The ends of the tapers or wood should be very dry, and then dipped in hot melted sulphur and laid aside to dry; then take 4 parts of glue, dissolve it and while hot add one part of phosphorus, and stir in a few spoonsful of fine whiting to bring it to the proper thickness. This preparation should be kept hot by being suspended over a lamp, while dipping the wood or tapers. Colour the mixture by adding a little vermilion, lamp-black or prussian blue; be careful not to ignite the compound while dipping.

35. FIRE AND WATER-PROOF CEMENT.

To half a pint of milk add half a pint of vinegar to curdle it; then separate the curd from the whey, and mix the whey with 4 or 5 eggs; beating the whole well together; when it is well mixed, add a little quick-lime through a sieve, until it has acquired the consistence of a thick paste. This is a prime article for cementing marble, in or out of the weather. It is also excellent for broken vessels, &c.

36. FRENCH CHEMICAL SOAP.

Take 5 lbs. castile soap, cut fine, 1 pint alcohol, 1 pint soft water, 2 ounces aquafortis, (if for black cloth $\frac{1}{2}$ ounce of lampblack,) 2 ounces saltpetre, 3 ounces potash, 1 ounce camphor, 4 ounces cinnamon in powder. First dissolve the soap, potash, and saltpetre by boiling, then add all the other articles, and continue to stir until it cools, then pour it into a box, let it stand 24 hours, and cut it into cakes. It is used for taking grease, stains, and paints from cloth, wood, &c. This receipt has been frequently sold for \$10.

37. BLACK INK, WITHOUT SEDIMENT.

This ink is not injured by frost—is a beautiful article, and only costs 5 cents. per gallon, and is sold for from \$1 to \$3.

Take 1lb. logwood, 1 gallon soft water, simmer in an iron vessel for one hour, then dissolve in a little hot water 24 grains bychromate of potash, and 12 grains prussiate of potash, and stir into the liquid while over the fire, then take it off and strain it through a fine cloth. This ink is a jet black,

flows freely from the pen, and will stand the the test of œxylic acid.

38. INDELIBLE INK.

1 inch of the stick of the nitrate of silver dissolved in a little water, and stirred into each gallon of the above, makes a first rate indelible ink for cloth. Judge what indelible ink costs.

39. INDELIBLE INK.

Nitrate of silver $1\frac{1}{2}$ oz., dissolved in liquor ammonia fortisine $5\frac{1}{2}$ oz., orchil for colouring $\frac{3}{4}$ oz., gum mucilage 12 oz, mix the two latter, then mix them with the two former, and it is ready for use.

40. WRITING FLUID, OR BLACK COPYING INK.

Take two gallons of rain water and put into it gum arabic $\frac{1}{4}$ lb., brown sugar $\frac{1}{4}$ lb., clean copperas $\frac{1}{4}$ lb., powdered nut galls $\frac{3}{4}$ lb., mix and shake occasionally for ten days, and strain. If needed sooner, let it stand in an iron kettle until the strength is obtained. This ink can be depended

on for deeds or records, which you may want some one to read hundreds of years to come. Oxalic acid $\frac{1}{4}$ oz. was formerly put in, but [as it destroys the steel pens, and does just as well without it—it is now never used.

41. BEST INK POWDER.

This is formed of the dry ingredients for ink, powdered and mixed. Take powdered galls one pound, powdered green vitriol half a pound, powdered gum 4 ounces, mix all together, put it up into 2 ounce packages, each of which will make a pint of ink.

42. BEST RED INK.

Take of best carmine (nazarot) 2 grains, rain water $\frac{1}{2}$ ounce, water of ammonia 20 drops, add a little gum-arabic, and it is in a few minutes ready for use.

43. YELLOW INK.

Dissolve alum in saffron water to whatever shade of yellow you please. It makes a beautiful ink.

44. BLUE INK.

Take Prussian blue, and œxylic acid, in equal parts, powder finely, and add soft water to bring it to a soft paste, and let it stand for a few days, then add soft water to the desired shade of colour; add a little gum-arabic to prevent spreading.

45. GOLDEN INK.

Take some white gum-arabic, reduce it to an impalpable powder in a brass mortar, dissolve it in strong brandy, and add a little common water to render it more liquid, provide some gold in a shell, which must be detached in order to reduce it to a powder, when this is done moisten it with the gum solution, and stir the whole with a small hair brush, or your finger, then leave it for a night that the gold may be better dissolved. If the composition becomes dry during the night, dilute it with more gum water in which a little saffron has been infused, but take care that the gold solution be sufficiently liquid to flow freely in a pen; when the writing is dry polish it with a dry tooth.

46. WHITE INK FOR WRITING ON BLACK PAPER.

Having carefully washed some egg shells, remove the internal skin and grind them on a piece of porphyry, then put the powder in a small vessel of pure water, and when it has settled at the bottom, draw off the water and dry the powder in the sun. This powder must be preserved in a bottle; when you want to use it put a small quantity of gum-ammoniac into distilled vinegar, and leave it to dissolve during the night, next morning the solution will appear exceedingly white, and if you then strain it through a piece of linen cloth, and add to it the powder of egg shells in sufficient quantity, you will obtain a very white ink.

47. SECRET INK FOR YOUNG LADIES AND GENTS.

Take a drachm of clean rain water, put into it, in a clean vial, 10 or 12 drops of pure, clear sulphuric acid, and it is ready for use; write with this using a clean quill pen on letter paper, and when dry you can see no mark at all, then hold it to a strong heat and the writing becomes as

black as jet. If you want to write to a young lady or gentleman, as the case may be, and fearing that the letter might be opened before she or he gets it, write with common black ink something of no importance, then between the lines write what you want to say with the secret ink. The person to whom you are writing must understand the scheme so that she or he may hold it to the heat and thereby make the writing visible.

48. CIDER WITHOUT APPLES.

To each gallon of cold water put 1 lb. common sugar, $\frac{1}{2}$ ounce of tartaric acid, one tablespoonful of yeast, shake well, make in the evening and it will be fit for use next day. I make in a keg a few gallons at a time, leaving a few quarts to make into next time, not using yeast again until the keg needs rinsing. If it gets a little sour, make a little more into it or put as much water with it as there is cider and put it with the vinegar. If it is desired to bottle this cider by manufacturers of small drinks, you will proceed as follows: put in a barrel 5 gallons of hot water, 30lbs. of brown sugar, $\frac{3}{4}$ lb. of tartaric acid, 25 gallons of cold water, 3 pints of hop or brewer's yeast, work into

paste with $\frac{3}{4}$ lb. of flour, and one pint water will be required in making this paste; put all together in a barrel which it will fill and let it work 24 hours, the yeast running out at the bung all the time by putting in a little occasionally to keep it full; then bottle, putting in two or three broken raisins to each bottle, and it will nearly equal champagne.

49. SPRUCE OR AROMATIC BEER.

Take 3 gallons of water, $2\frac{1}{2}$ pints molasses, 3 eggs well beaten, 1 gill yeast, put into two quarts of the water boiling hot, put in 50 drops of any oil you wish the flavour of, or mix one ounce each, oil sarsafra, spruce, and wintergreen; then use the 50 drops. For ginger flavour take 2 ounces ginger root bruised and a few hops, and boil for 30 minutes in one gallon of the water, strain and mix all; let it stand 2 hours and bottle, using yeast, of course, as before.

50. LEMON BEER.

To make 20 gallons, boil 6 ounces of ginger root bruised, $\frac{1}{4}$ lb. cream-tartar for 20 or 30 minutes

in 2 or 3 gallons of water ; this will be strained into 13lbs. of coffee sugar on which you have put 1oz. oil of lemon and six good lemons all squeezed up together, having warm water enough to make the whole 20 gallons, just so you can hold your hand in it without burning, or about 70 degrees of heat ; put in $1\frac{1}{2}$ pint hops or brewer's yeast worked into paste as for cider, with 5 or 6 ozs. of flour ; let it work over night, then strain and bottle for use. This will keep a number of days.

51. PHILADELPHIA BEER.

Take 30 gallons of water, brown sugar 20lbs., ginger root bruised $\frac{1}{4}$ lb., cream-tartar $1\frac{1}{4}$ lb., carbonate of soda 3 ounces, oil of lemon 1 teaspoonful, put in a little alcohol, the white of 10 eggs well beaten, hops 2 ounces, yeast one quart. The ginger root and hops should be boiled for 20 or 30 minutes in enough of the water to make all milk warm ; then strain into the rest, and the yeast added and allowed to work itself clear as the cider and bottled.

52 SILVER TOP DRINK.

Take of water 3 quarts, white sugar 4 lbs., oil

of lemons one teaspoonful, white of 5 eggs, beaten with one teaspoonful of flour; boil to form syrup, then divide into equal parts, and to one add 3 ounces of tartaric acid, and to the other part 4 oz. of carbonate of soda, then take two-thirds of a glass of water, and put in a spoonful of each of the syrups, more or less, according to the size of the glass.

53. DIRECTIONS FOR MAKING SODA DRINKS.

In getting up any of the soda drinks which are spoken of hereafter it will be preferable to put about 4oz. of carbonate (sometimes called super-carbonate) of soda into one pint of water, and shake when you wish to make a glass of soda, and pour from this into the glass until it foams well instead of using dry soda as directed.

54. IMPERIAL CREAM NECTAR.

Part 1st.—Take 1 gallon water, 6lbs. loaf sugar, 6 ounces tartaric acid, gum arabic 1oz.
Part 2nd.—Take 4 teaspoonsful of flour, the whites of four eggs beat finely together, then add $\frac{1}{2}$ pint of

water. Heat the first part until it is blood-warm, then put in the second, boil 3 minutes and it is done. Directions.—To 3 tablespoonfuls of the syrup in a glass half or two-thirds full of water add one-third of a teaspoonful of carbonate of soda made fine, stir well, and drink at your leisure.

55. A SUPERIOR GINGER BEER.

Take of sugar 10lbs., lemon juice 9 oz., honey $\frac{1}{2}$ lb., bruised ginger root 11 oz., water 9 galls., yeast 3 pints, boil the ginger in the water until the strength is all extracted, which you may tell by tasting the root, then pour it into a tub, throwing the roots away, let it stand until nearly luke warm, then put in all the rest of the ingredients, stir well until all dissolved, cover it over with a cloth, and if it be in the evening, let it remain until next morning, then strain through cloth, and bottle it, and in a short time it will be fit for use. Some use less sugar, and some less lemon juice, to make it with less expense; but it is not so elegant a drink as this.

56. GINGER POP No. 1.

Take of water $5\frac{1}{2}$ galls., ginger root bruised

$\frac{3}{4}$ lb., tartaric acid $\frac{1}{2}$ oz., white sugar 2 $\frac{1}{4}$ lbs., the whites of 3 eggs well beat, a small teaspoonful of oil of lemon, yeast 1 gill; boil the root for 30 minutes in 1 gallon of the water, strain off, and put the oil in while hot, mix all well, make over night, in the morning skim, and bottle, keeping out sediment.

57. GINGER POP No. 2.

Take best white Jamaica ginger root bruised 2oz., water 6 quarts, boil 20 minutes and strain, then add cream tartar 1oz., white sugar 1lb.; put on the fire, and stir until all the sugar is dissolved; then put into an earthen jar, now put in tartaric acid $\frac{1}{4}$ oz., and the rind of 1 lemon, let it stand until 70 degrees of fahrenheit, or until you can bear your hand in it with comfort, then add two tablepoonsful of yeast, stir well, bottle for use, and tie the corks; make a few days before it is wanted for use.

58. YEAST.

Take a good single handful of hops, and boil for 20 minutes in 3 pints of water, then strain,

and stir in a teacupful of flour, a tablespoonful of sugar, and a teaspoonful of salt; when a little cool put in 1 gill of brewer's yeast, and after four or five hours cover up, and stand in a cool place for use; make again from this unless you let it get sour.

59. SODA SYRUPS.

Take of loaf or crushed sugar 8lbs., pure water 1 gall., gum-arabic 1oz., mix in a brass or copper kettle, boil until the gum is dissolved, then skim and strain through white flannel, after which add tartaric acid $5\frac{1}{2}$ oz. dissolved in hot water. To flavour use of extract of lemon, orange, rose, sarsaparilla, strawberry, &c., $\frac{1}{2}$ oz., or to your taste. If you use the juice of lemon, add $1\frac{1}{2}$ lbs. of sugar to a pint; you do not need any tartaric acid with it; now use 2 or 3 table-spoonful of syrup to $\frac{3}{4}$ of a tumbler of water, and $\frac{1}{3}$ teaspoonful of super-carbonate of soda made fine, stir well and be ready to drink; the gum-arabic, however, holds the carbonic acid so it will not fly off so readily as common soda. For soda fountains, 1oz. of supercarbonate of soda is used to 1 gallon of water. For charged fountains no acids are needed in the syrups.

60. MINERAL WATER.

Epsom salts 1 oz., cream tartar $\frac{1}{2}$ oz., tartaric acid $\frac{1}{4}$ oz., loaf sugar 1 lb., oil of birch 20 drops ; put 1 quart boiling water on all these articles, and add 3 quarts of cold water to 2 tablespoonsful of yeast ; let it work 2 hours and then bottle.

61. IMPROVED ENGLISH STRONG BEER.

If you have malt use it, if not, take 1 peck of barley, and put it into a stove oven, and steam the moisture from them, grind coarsely, and pour into them $3\frac{1}{2}$ gallons of water, at 170 or 172 degrees. (If you use malt it does not need quite so much water, as it does not absorb so much as the other. The tub should have a false bottom with many gimblet holes to keep back the grain.) Stir them well and let stand 3 hours and draw off, put on 7 gallons more water at 180 or 182 degrees, stir well, let stand 2 hours and draw off, then put 1 gallon or 2 of cold water, stir well and draw off ; you should have about 5 or 6 gallons ; mix 6 lbs. coarse brown sugar in equal amount of water, add 4 oz. of good hops, boil for $1\frac{1}{2}$ hour ; you should have from 8 to 10 gallons when boiled ;

when cooled to 80 degrees, put in a teacupful of good yeast, and let it work 18 hours covered with a sack. Use sound iron-hooped kegs, or porter bottles, bung or cork tight, and in two weeks it will be good sound beer, nearly equal in strength to London porter, or good ale, and will keep a long time.

62. SANGAREE.

Take wine, ale, or porter, $\frac{1}{3}$, and $\frac{2}{3}$ water, hot, or cold, according to the season of the year, loaf sugar to the taste with nutmeg.

63. GINGER WINE.

Put 1oz. good ginger root bruised in 1 quart of 95 per cent. alcohol, let it stand 9 days, and strain, add 4 quarts of water, and 1lb. of white sugar, dissolved in hot water, 1 pint port wine to this quantity, for what you retail at your own bar makes it far better; colour with tincture of saunders to suit; drink freely of this hot on going to bed, when you have a bad cold, and in the morning you will bless ginger wine.

64. HOP BEER.

Take of hops 6oz., molasses 5 quarts, boil the hops in water till the strength is out, strain them into a 30 gallon barrel, add the molasses and a teacupful of yeast, and fill up with water, shake it well and leave the bung out until fermented, which will be in about 24 hours ; bung up, and it will be fit for use in about 3 days. A most excellent summer drink, smaller quantities in proportion.

65. USQUEBAUGH, OR IRISH WHISKEY.

Best brandy 1 gallon, stoned raisins 1lb., cinnamon, cloves, nutmeg, and cardamom, each 1oz., crushed in a mortar, saffron $\frac{1}{2}$ oz., or the rind of 1 Seville orange, and a little sugar candy ; shake these well, and it is ready for use in 14 days.

66. ICE CREAM.

Add a little rich sweet cream, and $\frac{1}{2}$ lb. of loaf sugar to each quart of cream or milk ; if you cannot get cream the best imitation is to boil a soft custard ; 6 eggs to each quart of milk, (eggs well

beaten); or another way, boil a quart of milk, and stir into it, while boiling, a tablespoonful of arrow-root, wet with cold milk, when cool stir in the yolk of one egg, to give a rich colour; five minutes boiling is enough for either plan; put the sugar in after they cool, keep the same proportions for any amount desired. The juice of strawberries, or raspberries, give a beautiful colour and flavour to ice creams; or about $\frac{1}{2}$ oz. of the essence or extracts to a gallon, or to suit the taste. Have your ice well broken, add 1 quart of salt to a bucket of ice, then place in this the vessel containing your cream, and about one half hour's constant stirring and occasional scraping down and beating together will freeze it.

67. CHICAGO ICE CREAM.

Irish moss soaked in warm water about an hour, and rinsed well to clear it of sand and a certain foreign taste, then steep it in milk, keeping it just at the point of boiling or simmering for an hour, or until a rich yellow colour is given to the milk, without cream or eggs; 1 or $1\frac{1}{2}$ oz. of moss is enough for a gallon of cream, and this will do to steep twice. Sweeten and flavour as other cream.

68. CREAM SODA.

Loaf sugar 10lb., water 3 gills, mix, and warm gradually, so as not to burn, good rich cream 2 quarts, extract vanilla $1\frac{1}{2}$ oz., extract nutmeg $\frac{1}{4}$ oz., and tartaric acid 4oz.; just bring to a boiling heat; for if you cook it any length of time it will crystallize. Use 4 or 5 spoonful of this syrup instead of 3, as in other syrups; put $\frac{1}{3}$ tea-spoonful of soda to a glass, if used without fountain. For charged fountains no acid is used.

69. LEMON SYRUP.

Take of the juice of lemons one pint, white sugar one and a half pound, and a little of the peel. Mix and boil a few minutes, strain, and when a little cool, bottle, and cork, for use.

70. ORANGE AND RASPBERRY SYRUPS.

Take of the juice of either, as the case may be, one pint; white sugar one and a half pound. If it be orange a little of the peel; tartaric acid 4oz. Mix and boil a few minutes; strain, and when a little cool, bottle and cork for use. When to be

drank, mix three or four table-spoonsful of syrup with three quarters of a glass of water, and add a tea-spoonful of soda. If water be added to the syrup it will not keep well.

71. PURE WINE.

Take three pounds of nice raisins free of stems, cut each one into two or three pieces, put them into a stone jug with one gallon pure soft water, let them stand two weeks uncovered, shaking occasionally, (put in a warm place in winter,) strain through three or four thicknesses of woollen, or filter; colour with burned sugar; bottle and cork well for use. For saloon purposes, add one pint of good brandy. The more raisins the better the wine, not exceeding 5 lbs.

72. PURE WINE VINEGAR.

This is made by putting the same quantity of water on the above raisins, after the wine is poured off, as at first for making wine, and standing the same length of time, in the same way.

73. PORT WINE.

Take 42 gallons of worked cider, 12 gallons

good port wine, 3 gallons good brandy, 6 gallons pure spirits. Mix together. Elder-berries and sloes, or the fruit of the black hawes, make a fine purple colour for wines.

74. CHAMPAGNE WINE.

Take of good cider (crab-apple cider is best) seven gallons, best fourth proof brandy one quart, genuine champagne wine, five quarts, milk one gill, bitartrate of potash 2oz. Mix and let it stand a short time; bottle while fermenting. This makes an excellent imitation of champagne with age.

75. CURRANT AND OTHER FRUIT WINES.

For currant, cherry, raspberry, elderberry, strawberry, whortleberry, blackberry, and wild grape wines, any one can be used alone, or a combination of several of the different kinds; to make a variety of flavours, or suit persons who have some and not the other kinds of fruits, to every gallon of expressed juice, add 2 galls. of soft water, put in 6 to 8 lbs. of brown sugar, and $1\frac{1}{2}$ oz. of cream of tartar, have them dissolved; put 1 quart of brandy to every 6 galls. Some prefer it without

brandy. After fermentation, take 4oz. isinglass, dissolved in a pint of the wine, put to each barrel, and it will refine and clear it; then it must be drawn off into clear casks, or bottled, which is far the best. Give these wines age and they are most delicious.

76. DINNER WINE OR ENGLISH PATENT WINE.

From garden rhubarb, which will not lead to intemperance. An agreeable and healthy wine is very frequently made from the expressed juice of the garden rhubarb. To each gallon of juice add 1 gallon of soft water, in which 7lbs. of brown sugar have been dissolved; fill a keg or barrel with this proportion, leaving the bung out, and keep it filled with sweetened water as it works off until clear. Any other vegetable extract may be added, if this flavour is not liked. Then bung down, or bottle, as you desire. These stalks will furnish about $\frac{3}{4}$ their weight in juice; fine and settle with isinglass, as in the fruit wines. This has been patented in England.

77. VARIOUS WINES.

Take 28 gallons of clarified cider; 1 gallon

good brandy, 1lb. crude tartar, (this is what is deposited by grape wines) 5 gallons of any wine you wish to represent, 1 pint of sweet milk to settle it; draw off in 24 or 36 hours after thoroughly mixing.

78. BLACKBERRY AND STRAWBERRY WINES.

These are made by taking the above wine when made with port wine; and for every 10 gallons, from 4 to 6 quarts of the fresh fruit, bruised and strained, are added, and let it stand till the flavour is extracted; more or less may be used to suit the tastes of different persons. In bottling any of those wines 3 or four broken raisins put into each bottle will add to their richness and flavor.

79. FRENCH BRANDY.

Take of pure spirit 1 gallon, best French brandy, or any kind you wish to imitate, even Otard, 1 quart; loaf sugar 2oz., sweet spirits of nitre $\frac{1}{2}$ oz., a few drops of tincture of catechu, or oak bark, to roughen the taste if desired; colour to suit your taste, and bottle.

80. BRANDY FROM OIL COGNAC.

Take of pure spirits 10 gallons, New England rum 2 quarts, or Jamaca rum 1 quart, and oil cognac from 30 to 40 drops, put in half a pint of alcohol, colour with tincture of kino, or burned sugar, which is generally preferred. Mix well and bottle.

81. PALE BRANDY.

This is made as the French brandy, using pale instead of the French, and using 1oz. of tincture of kino for colour, only for 5 gallons.

82. CHERRY BRANDY.

To every 10 gallons of brandy add 3 quarts of wild black cherries, stones and all bruised, and crushed sugar 2lbs. Let it stand until the strength and flavour is obtained, and draw from it as wanted for use. Never attempt to use oil of bitter almonds for this purpose, instead of the cherries, for it is a most deadly poison.

83. BLACKBERRY BRANDY.

Take of brandy 10 gallons, nice rich blackberries

mashed from 4 to 6 quarts, according to the degree of flavour you wish. Mix, and add a little sugar to overcome the acidity of the berries, according to their ripeness will the amount vary from one to 4oz. to each gallon.

84. STRAWBERRY BRANDY.

This is made as the above, using very nice ripe strawberries, and only about half the quantity of sugar.

88. HOLLAND GIN.

Take of pure spirits 1 gallon, best Holland gin, schnapps, or any kind desired, 1 quart, oil of juniper 2 scruples, oil of anise $\frac{1}{4}$ of an oz. ; mix all well together.

89. COLOURING.

Take of white sugar 1lb., put it into an earthen kettle, moisten a little, let boil, and burn red, black and thick, remove from the fire and put in a little hot water to keep it from hardening as it cools. Use this to colour any liquors, needing colour, to your taste, or as near the colour of the liquor

you imitate as you can. Tincture of kino is a good colour, and is made by dissolving 1oz. of kino in a pint of alcohol. For a cherry red use tincture of saffron ; for light amber to deep brown use sugar colouring ; for brandy colour, sugar ; for red use beet root or saunders ; for port wine colour use extract of rhatany.

90. TO KEEP CIDER SWEET AND SWEETEN SOUR CIDER.

To keep cider sweet take a keg, put several holes in the bottom of it, and a piece of woollen cloth at the bottom, then fill with pure sand closely packed, then pass your cider through this, and put up in clean barrels that have had a piece of cotton or linen cloth 2 by 6 inches, dipped in sulphur, and burned in them, then keep in a cool place and add $\frac{1}{2}$ lb. of white mustard seed to each barrel. If cider is souring, about 1 quart of hickory ashes, (or a little more of other hard wood ashes), stirred into each barrel, will sweeten and clarify it, nearly equal to rectifying ; but if it is not rectified it must be racked off to get clear of pomace, for while this is in it it will remain sour. Oil or whiskey barrels are best to put up cider in, or $\frac{1}{2}$ pint sweet oil, or

a gallon of whiskey, or both, may be added to a barrel with decidedly good effects. Isinglass 4ozs. to each barrel helps to clarify and settle cider that is not going to be rectified.

91. SCHRUB.

Take of lemon juice 1 pint, white sugar 2 pints, rum 3 pints, water 4 pints; mix and colour ready for use.

92. STOUGHTON BITTERS.

Take of gentian 4oz., orange peel 4oz., columbo 4oz., chamomile flowers 4oz., quassia 4oz., burned sugar 1lb., whiskey $2\frac{1}{2}$ galls., water $2\frac{1}{2}$ galls.; mix and let stand one week, then bottle the clear liquor.

93. TO IMPROVE THE FLAVOUR OF NEW WHISKEY.

Take of whiskey 1 gall., add tea 4oz., allspice 4oz., carawayseed 4oz., cinnamon 2oz., shake occasionally for a week and use one pint to a barrel. Keep this mixture in a jug.

94. CHERRY BOUNCE OR BRANDY.

Take 10 galls. of good whiskey, put into it from
D2

4 to 6 quarts of wild black cherries with the stones broken, common almonds shelled 1lb., white sugar 1½lb., cinnamon ½oz., nutmeg ½oz., all bruised. Let stand 12 or 13 days and draw off; this, with the addition of 2 galls. of brandy, makes very nice cherry brandy.

95. MONONGAHALE.

Take of good common whiskey 36 galls., dried peaches 2 quarts, rye, burned and ground as coffee, 1 quart, cinnamon, cloves, and allspice, bruised, of each 1oz., loaf sugar 5lbs., sweet spirits of nitre 2oz., put all these articles into 4 galls. of pure spirits, and shake every day for a week, then draw off through a woollen cloth, and add the whole to the 36 galls. of whiskey.

96. RYE WHISKEY.

Take of dried peaches ½ a peck, put them into a pan in a stove, scorch a little, not to burn however, then bruise, and place in a woollen (pointed) bag, and leach good common whiskey over them twice, having the barrel up so as to hang the bag under the faucet and draw slowly over them; this is for a

barrel. Add 10 to 12 drops of aqua ammonia to each barrel, after leaching through the peaches; with age this is nearly, if not quite, equal to whiskey made from rye.

97. STOMACH BITTERS.

Take of gentian root 6 oz., orange peel 10oz., cinnamon 1oz., anise seed 2oz., coriander seed 2oz., cardamom seed $\frac{1}{2}$ oz., Peruvian bark, unground, 2oz., bruise all the articles and add of gum kino 1oz., and put them into 2 quarts of alcohol, and 2 quarts of pure spirits or good whiskey; shake occasionally for 10 or 12 days, and strain or filter through several thicknesses of woollen. Half a pint of this may be added to a gallon of whiskey, more or less, as desired, and you have an article as good, or better, and more healthy than that for which you will pay three times as much; or you may use it the same as stoughton, to which it is preferred.

98. PEPPERMINT CORDIAL.

Take of good whiskey 10 galls., water 10 galls., white sugar 10lbs., oil of peppermint 1oz., flour 1 oz., burned sugar $\frac{1}{2}$ lb. to colour, alcohol 1 pint; put

the oil of peppermint in the alcohol, then with this work the flour well, add the burned sugar, work again, and mix all the ingredients together; let them stand a week and they are ready for use. If you wish a different flavour from that of oil of peppermint use any other oil of which you desire the flavour.

99. ST. CROIX RUM.

Take of pure spirits 28 galls., of pure St. Croix rum 3 galls., sal ammonia (cut in alcohol) 1oz., sweet spirits of nitre 6ozs., mix all together and let stand for 24 hours, occasionally shaking, and it is ready for use.

100. LEMONADE.

Take of fresh lemon juice 4oz., fresh lemon peel $\frac{1}{2}$ oz., white sugar 4oz., boiling water 3 pints; mix all together; let them stand till cool, and then strain off for use; if you wish you can cool at once with ice. Where this is used as a cooling drink in fevers a little sweet spirits of nitre may be added.

101. A BRILLIANT WHITEWASH.

This bears a gloss like ivory, and will not rub off. Take of clean unslacked lime 5 or 6 quarts, slack with hot water in a tub, cover to keep in the steam; when ready, pass it through a fine sieve, and add $\frac{1}{4}$ lb. of whiting, 1lb. of good sugar pulverized, and 3 pints of rice flour, first made into a thin paste; boil this mixture well, then dissolve 1 lb. of clean glue in water, and add it to the mixture, finally add 5 galls. of hot water to the whole mixture, and apply while warm with a whitewash brush, except when particular neatness is required you may then use a paint brush; in both cases put it on warm. You may add colouring matter to give it any shade you please.

102. CHANGING VARNISHES.—OR VARNISHES TO IMITATE GOLD, SILVER, COPPER, BRASS, &c.

Varnishes of this description are called changing, because, when applied to metals such as copper, brass, or tin or silver foil, they give them a more agreeable colour; indeed, the common metals, when coated with them acquire a lustre approaching to that of

the precious metals, and hence these varnishes are much employed in manufacturing imitations of gold and silver. Put four ounces of the best gum gamboge into 32ozs. of spirits of turpentine, 4ozs. of dragon's blood into the same quantity of spirits of turpentine as the gamboge, and 1oz. of anatto into 8ozs. of the same spirits. The three mixtures being made in different vessels, they should then be kept for about a fortnight in a warm place, and as much exposed to the sun as possible; at the end of that time they will be fit for use; and you can procure any tints you wish by making a composition from them, with such proportions of each liquor as practice and the nature of the colour you are desirous of obtaining will point out. Changing varnishes may likewise be employed, with very good effect, for furniture, such as picture frames, &c.—See Lackers.

103. GOLD LACKER OR VARNISH.

In using the changing varnish or any of these lackers, for picture frames for instance, lay them over with tin or silver foil, by means of plaster of Paris glue, or cement of some kind, that the foil may be perfectly adherent to the wood, then apply

your varnish; apply as many coats as may suit your taste, and if it be the gold lacker you use, it has the appearance of being laid with gold leaf, and if the pale brass lacker, of being laid with brass, &c., and if you use the changing varnish you may make it just what colour you wish, by mixing the three materials in different proportions. For making gold lacker, put into a clean 4 gallon tin 1lb. ground turmeric, $1\frac{1}{2}$ oz. powdered gamboge, $3\frac{1}{2}$ lbs. powdered gum sandrack, $\frac{3}{4}$ lb. shellac, and 2 galls. spirits of wine; after being dissolved and strained add 1 pint of turpentine varnish, receipt No. 112, well mixed, and it is ready for use.

104. RED SPIRIT LACKER.

Take 2 galls. spirits of wine, 1lb. dragon's blood, 3lbs. Spanish annatto, $3\frac{1}{2}$ lbs. gum sandrack, 2 pints turpentine. Made exactly as the gold lacker.

105. PALE BRASS LACKER.

Take 2 galls. spirits of wine, 3ozs. cape aloes, cut small, 1lb. fine pale shellac, 1oz. gamboge, cut small, no turpentine. Varnish made exactly as before, but observe, that those who make lackers

3D

frequently want some paler and some darker, and sometimes inclining more to the particular tint of certain of the component ingredients ; therefore if a 4oz. vial of a strong solution of each ingredient be prepared, a lacker of any tint can be prepared at any time as by changing varnish.

106. DEMAR VARNISH.

This is a fine clear varnish, being harder and less coloured than mastic, while it is as soluble, and may be had at one-tenth the price. Put 6oz. of gum demar in a bottle with 10ozs. of spirits of turpentine, and put into another bottle 6ozs. of gum demar, with 16ozs. alcohol, when they are dissolved put them together, and you have an excellent cheap varnish which dries quickly and is very clear.

107. COPAL VARNISH.

Take 1oz. of copal, and $\frac{1}{2}$ oz. of shellac, powder them well and put them into a bottle or jar containing 1 quart of spirits of wine ; place the mixture in a warm place and shake it occasionally, till you see that the gums are completely dissolved, and when strained the varnish is fit for use.

108. CRYSTAL VARNISH.

Procure a bottle of Canada balsam, which can be had at any druggist's; draw out the cork and set the bottle of balsam at a little distance from the fire, turning it round several times, until the heat has thinned it; then have something that will hold as much as double the quantity of balsam; carry the balsam from the fire, and, while fluid mix it with the same quantity of good turpentine, and shake them together until they are well incorporated. In a few days the varnish is fit for use, particularly if it is poured into a half gallon glass or stone bottle, and kept in a gentle warmth. This varnish is used for maps, prints, charts, drawings, paper ornaments, &c.

109. WHITE HARD VARNISH.

Take 1lb. of mastic, 4oz. of gum anima; and 5lbs. of gum sandrac, put them all together, to dissolve, into a vessel containing 2oz. of rectified spirits of wine, which should be kept in a warm place and frequently shaken till all the gums are quite dissolved; then strain the mixture through a lawn sieve, and it will be fit for use.

110. BLACK VARNISH FOR OLD STRAW OR CHIP HATS.

Take a $\frac{1}{2}$ oz. of the best black sealing wax, pound it well, and put it into a 4oz. vial, containing 2ozs. of rectified spirits of wine; place it in a sand-bath or near a moderate fire till the wax is dissolved, then lay it on warm, with a fine soft hairbrush, before a fire or in the sun. It gives a good stiffness to old straw hats, and a beautiful gloss equal to new. It likewise resists wet.

111. VARNISH FOR VIOLINS, &c.

Take 1 gallon of rectified spirits of wine, 12 ozs. of mastic, and 1 pint of turpentine varnish; put them altogether in a tin can, and keep it in a very warm place, shaking it occasionally till it is perfectly dissolved; then strain it, and it is fit for use. If you find it necessary, you may dilute it with turpentine varnish. This varnish is also very useful for furniture of plumbtree, mahogany, or rosewood.

112. TURPENTINE VARNISH.

Take 5lbs. of clear good resin, pound it well,

and put it into 1 gallon of oil of turpentine; boil the mixture over a stove till the resin is perfectly dissolved, and when cool, it will be fit for use.

113. IRON WORK BLACK, OR BLACK VARNISH FOR IRON.

Put 48lbs. asphaltum into an iron pot, and boil for four hours; during the first two hours, introduce 7 lbs. litharge, 3 lbs. dried copperas, and 10 gallons boiled oil; add $\frac{1}{8}$ lb. run of dark gum, with 2 gallons hot oil; after pouring the oil and gum, continue the boiling two hours, or until it will roll into hard pills like japan; when cool, thin it off with 3 gallons of turpentine, or until it is of proper consistence. This varnish is intended principally for the iron-work of coaches and other carriages.

114. VARNISH FOR HARNESS.

Take $\frac{1}{2}$ lb. of india rubber, 1 gallon of spirits of turpentine; dissolve enough to make it into a jelly by keeping it almost new milk warm; then take equal quantities of good linseed oil, (in a hot state,) and the above mixture, incorporate them well on a slow fire, and it is fit for use.

115. QUICK DRYING HARNESS-BLACKING VARNISH.

Break $\frac{1}{2}$ a cake (which is about 1 ounce) of white wax into an earthen pan, and just cover it with oil of turpentine; place a board over the pan to keep out the air; let it stand for 24 hours or until formed into a paste; then in another pan, mix 1lb. of best ivory black with neatsfoot oil, until it assumes a thick consistency; then mix the contents of both pans together. It may be reduced with spirits of turpentine. Bottle, and it is fit for use.

116. OIL PASTE BLACKING.

Take oil vitriol, 2ozs., tanner's oil, 5ozs., ivory black, 2lbs., molasses, 5ozs; mix the oil and vitriol together, let it stand a day, then add the ivory black, the molasses, and the white of an egg; mix well, and it is ready for use.

117. WATER-PROOF OIL, OR PASTE BLACKING.

Take 1 pint of camphene, and put into it all the

india rubber it will dissolve, 1 pint currier's oil, 7lbs. tallow, and 2 ozs. of lampblack; mix thoroughly by heat. This is a nice thing for old harness and carriage-tops, as well as for boots and shoes.

118. BEST VARNISH BLACKING EXTANT.

Take of alcohol, 1 gallon; white turpentine, 1½lbs.; gum shellac, 1½lbs.; venice turpentine, 1 gill; let these stand in a jug in the sun, or by a stove, until the gums are dissolved; then add sweet oil, 1 gill; lampblack, 2oz., and you have a varnish that will not crack when the harness is twisted like the old shellac varnish. It is good also for boots and shoes, looking well, and turns water.

119. ASPHALTUM OR WALNUT STAIN.

Take of asphaltum, 2lbs.; boiled linseed oil, ½ pint; spirits of turpentine, 1 gallon; mix the two first in an iron pot, boil slowly until the asphaltum is melted, then take it some distance from the fire, cool a little, and add the turpentine (avoiding ignition) before it cools too much, and it is finished.

120. POLISH FOR OLD FURNITURE.

Take 1 pint best spirits of wine, 1 pint raw linseed oil, 1 pint spirits of turpentine; mix all three together, and shake well before use. Apply with a rubber of cotton wool covered with a piece of clean old white cotton cloth. Apply slightly and you will be astonished at the effect. Old furniture that is scratched, soiled, or stained, if the wood is not torn up, being polished with this, has the appearance of new.

121. OIL TO MAKE THE HAIR GROW
AND CURL.

Take of olive oil $\frac{1}{2}$ a pint, oils of rosemary and origanum, of each $\frac{1}{8}$ of an oz. Mix well and apply rather freely.

122. BEST SHAVING SOAP.

Take $4\frac{1}{2}$ lbs. white bar soap, 1 quart rain water, 1 gill of beef's gall, and 1 gill spirits of turpentine; cut the soap thin, and boil five minutes, stir while boiling, and colour with $\frac{1}{2}$ oz. of vermilion;

scent with oil of rose or almonds. 10 cents worth will positively make \$6 worth of soap.

123. NEW YORK BARBERS' STAR HAIR OIL.

Take of castor oil, $6\frac{1}{2}$ pints; alcohol, $1\frac{1}{2}$ pint; citronella and lavender oils, of each 2ozs.; mix, and shake well, and it is ready for use.

124. ROWLAND'S MACASSAR HAIR OIL.

Take of sweet oil, 8 ozs.; cantharides and oil of lemon, of each, 60 drops; alkanet sufficient to color it.

125. ROSE HAIR OIL.

Take 1 quart olive oil, $2\frac{1}{2}$ ozs. alcohol, $1\frac{1}{2}$ ozs. rose oil; after this tie 1oz. of chipped alkanet root in 3 or 4 little muslin bags, and let them lie in the oil until a pretty red is manifested, then change them to other oil. Do not press them.

126. BEAR'S OIL.

Take of good sweet lard oil, 1 quart; bergamot, 1 ounce; mix well together.

127. OX MARROW FOR THE HAIR.

Take of ox marrow, 4ozs. ; white wax, 1oz. ; nice fresh lard, 6ozs ; mix and melt ; when cool, add $1\frac{1}{2}$ ozs. oil of bergamot, and mix well.

128. COLOGNE.

Take oils of rosemary and lemon, of each, $\frac{1}{4}$ oz. ; oils of bergamot and lavender, of each, $\frac{1}{8}$ oz. ; oil of cinnamon, 8 drops ; oils of cloves and rose, of each, 15 drops ; best alcohol, 2 quarts ; mix, and shake 2 or 3 times a day for a week. This will be better if deoderized, or cologne alcohol is used.

129. HARD SOAP.

Take of soft soap, 12lbs. ; (that made of olive oil is best,) common salt, 9 lbs. ; mix and boil for 2 hours, run it into bars, or as you want it, and you will have $7\frac{1}{2}$ lbs. of soap. Add a little resin when you melt it over. Scent with fragrant oil if you wish to do so.

130. BAR SOAP.

Take of lime water 1 teacupful, spirits of tur-

pentine 2 teaspoonsful, resin $\frac{1}{2}$ lb., sal. soda $1\frac{1}{2}$ lbs., of bar shop soap 4lbs. ; melt and boil all together to a proper consistency, then pour into moulds.

131. CARVER'S POLISH.

In a pint of spirits of wine dissolve 2oz. of seed lac, and 2oz. of resin. The principal use of this polish is for the carved parts of cabinet work, such as standards, pillars, claws, &c. It should be laid on warm, and if the work can also be warmed at the time, it will be still better ; but all moisture and dampness should be carefully avoided.

132. FRENCH POLISH.

Take 1oz. of shellac, $\frac{1}{4}$ oz. of gum-arabic, and $\frac{1}{4}$ oz. of gum copal ; bruise them well, and sift them through a piece of muslin, then put them along with a pint of spirits of wine into a closely corked vessel, place it in a very warm situation, and shake it frequently every day till the gums are dissolved, then strain through a piece of muslin, and keep it corked for use.

133. WATER-PROOF POLISH.

Put 2ozs. of gum benjamin, $\frac{1}{4}$ oz. of gum san-

drac, and $\frac{1}{4}$ oz. of gum anima, into a pint of spirits of wine, in a closely stopped bottle, place the bottle either in a sand bath, or in hot water, till the gums are dissolved, then strain off the mixture, shake it up with a $\frac{1}{4}$ of a gill of the best clear poppy oil, and put by for use.

134. FINISHING POLISH.

Put 2 drachms of shellac, and 2 drachms of gum benjamin, into $\frac{1}{2}$ a pint of the very best rectified spirits of wine, in a bottle closely corked; keep the bottle in a warm place, and shake it frequently till the gums are dissolved, when cold shake up with it 2 teaspoonsful of the best clear poppy oil, and it will be fit for use. This polish may be applied with great advantage after any of those mentioned in the foregoing receipts have been used. It removes the defects existing in them, increasing their lustre and durability, and gives the surface a most brilliant appearance.

135. COMPOSITION USED IN WELDING CAST STEEL.

Take of borax, 10 parts; sal-ammoniac, 1 part;

grind or pound them roughly together, then fuse them in a metal pot over a close fire, taking care to continue the heat until all spume has disappeared from the surface, when the liquid appears clear, the composition is ready to be poured out to cool and concrete; afterward being ground to a fine powder. To use this composition, the steel to be welded is raised to a heat, which may be expressed by bright yellow, it is then dipped among the welding powder, and again placed in the fire until it attains the same degree of heat as before, it is then ready to be placed under the hammer.

136. COMPOSITION USED IN WELDING CAST IRON.

Take of good clear white coarse sand, 3 parts; refined solton, 1 part; fosterine, 1 part; rock salt, 1 part; borax, 1 part; mix all together. Take 2 pieces of cast iron, heat them in a moderate charcoal fire, occasionally taking them out while heating, and dipping them into the composition, until they are of a proper heat to weld, then at once lay them on the anvil, and gently hammer them together, and if done carefully by one who understands welding iron, you will have

them nicely welded together. One man prefers heating the metal, then cooling it in the water of common beans, and heating it again for welding.

137. CAST IRON CEMENT.

Take of clean borings or turning of cast iron, 16 parts; of sal-ammoniac, 2 parts; and flour of sulphur, 1 part; mix them well together in a mortar, and keep them dry. When required for use, take 1 part of the mixture, and 20 parts of clean borings, mix thoroughly, and add a sufficient quantity of water. Note.—A little grindstone added improves the cement.

138. CASE HARDENING.

This is the conversion of the surface of wrought iron into steel, for the purpose of adapting it to receive a polish, or to bear friction, &c. The best method in the world of effecting this is by heating the iron to cherry red in a close vessel, in contact with carbonaceous material, and then plunging it into cold water. Bones, leather, hoofs, and horns of animals, are the best for this purpose, after having been burnt or roasted, so that they can be

pulverised. Soot is very frequently used ; it answers, but not so well.

139. TO SOFTEN IRON OR STEEL.

Either of the following simple methods will make iron or steel as soft as lead :—1. Anoint it all over with tallow, temper it in a gentle charcoal fire, and let it cool of itself. 2. Take a little clay, cover your iron with it, temper in a charcoal fire. 3. When the iron or steel is red hot, strew hellebore on it. 4. Quench the iron or steel in the juice, or water, of common beans.

140. SOLDER FOR LEAD.

Melt 1 part of block tin, and when in a state of fusion, add 2 parts of lead ; if a small quantity of this, when melted, is poured upon the table, there will, if it be good, arise little bright stars upon it. Resin should be used with this solder.

141. SOLDER FOR TIN.

Take 4 parts of pewter, 1 of tin, and 1 of bismuth, melt them together, and run them into

thin slips. Resin is also employed in using this solder.

142. SOLDER FOR IRON. .

The best solder for iron is good tough brass, with a little borax.

143. SOLDER FOR COPPER.

Take of brass, 6 parts; zinc, 1 part; tin, 1 part; melt all together, mix well, and pour out to cool.

144. SOLDER FOR STEEL JOINTS.

Silver, 19 parts; copper, 1 part; brass, 2 parts; melt all together.

145. HARD SOLDER.

Fuse together 2 parts of copper, and 1 of zinc.

146. SOLDER FOR SILVER.

Fuse together 5 parts of silver, and 1 part of brass.

147. GOLD SOLDER No. 1.

Take of gold, 4 parts; silver, 3 parts; copper, 1 part; and zinc, 1 part.

148. GOLD SOLDER No. 2.

Take of gold, 3 parts; silver, 3 parts; copper, 1 part; zinc, $\frac{1}{2}$ part.

149. GOLD SOLDER No. 3.

Take of gold, 2 parts; silver, 3 parts; copper, 1 part; and zinc $\frac{1}{2}$ a part. The gold, silver, and copper must be fused in a crucible before the zinc is added, or else you cannot keep them in the vessel while heating. When all are completely fused, they must be well stirred, and run into bars. Solder No. 1 is for gold 16 carrats and upwards; No. 2 is for that 14 carats fine; and No. 3 for lower qualities. If more zinc is added, it will fuse at a lower heat, but the colour is not so good.

150. MOCK GOLD.

Fuse together 16 parts of copper, 7 of platinum,

and 1 of zinc. When steel is alloyed with $\frac{1}{500}$ th part of platinum, or with $\frac{1}{300}$ th part of silver, it is rendered much harder, more malleable, and better adapted for all kinds of cutting instruments. Note.—In making alloys, care must be taken to have the more infusible metals melted first, and afterwards add the others.

151. BRITANNIA METAL.

Take 4 parts of brass, and 4 parts of tin; when fused add 4 parts of metallic bismuth, and 4 parts of metallic antimony. This composition is added at discretion to metallic tin, according to the quality you wish to make.

152. BLANCHED COPPER.

Melt together 8 parts of copper and a half part of arsenic.

153. COMMON PEWTER.

Melt together 4 parts of tin and 1 part of lead.

154. BEST PEWTER.

Melt together 100 parts of tin and 17 of antimony.

155. A METAL THAT EXPANDS IN COOLING.

Melt together 9 parts of lead, 2 of antimony and one of bismuth. This metal is very useful in filling small defects in iron castings, &c.

156. QUEEN'S METAL.

Melt together 9 parts of tin, 1 of antimony, 1 of bismuth, and 1 of lead.

157. IMITATION PLATINUM.

This metal, or alloy, very closely resembles platinum. Melt together 8 parts of brass and 5 of zinc.

158. CHINESE WHITE COPPER.

Melt together 40.4 parts of copper, 31.6 parts of nickel, 25.4 of zinc, and 2.6 of iron.

159. MANHEIM GOLD.

Melt together 3 parts copper, 1 of zinc, and a little tin.

160. TOMBACK, OR RED BRASS.

Melt together 8 parts of copper, and 1 part of zinc.

161. IMITATION GOLD.

Take of platina 8 parts, of silver 4 parts, copper 12 parts, melt all together.

162. IMITATION SILVER.

Take of block tin 100 parts, metallic antimony 8 parts, bismuth 1 part, and 4 parts of copper; melt all together.

163. TRUE IMITATION OF GOLD.

Dr. Harmsteadt's imitation of gold, which is stated not only to resemble gold in colour, but also in specific gravity and ductility, consists of 16 parts of platinum, 7 parts of copper, and 1 of zinc, put in a crucible, covered with charcoal powder, and melted into a mass.

164. TRUE IMITATION OF SILVER.

Imitation of pure silver, so perfect in its resem-

blance that no chemist living can tell it from pure virgin silver. It was obtained from a German chemist now dead; he used it for unlawful purposes to the amount of thousands, and yet the metal is so perfect that he was never discovered. It is all melted together in a crucible, here it is: $\frac{1}{2}$ oz. of copper, 2ozs. of brass, 3ozs. of pure silver, 1oz. of bismuth, 2ozs. of saltpetre, 2ozs. of common salt, 1oz. of arsenic, and 1oz. of potash.

165. MOULDS AND DIES.

Take copper, zinc, and silver, in equal proportions, and melt them together, and mould into the forms you desire, and bring the same to a nearly white heat; now lay on the thing that you would take the impression of, and press it with sufficient force, and you will find that you have a perfect and beautiful impression. All of the above metals should be melted under a coat of powdered charcoal.

166. TO SOFTEN HORN.

To 1lb. of wood ashes, add 2lbs. of quicklime; put them into a quart of water, let the whole boil

till reduced to one-third, then dip a feather in, and if, on drawing it out, the plume should come off, it is a proof that it is boiled enough, if not, let it boil a little longer; when it is settled filter it off, and in the liquor thus strained put in shavings of horn; let them soak for three days, and, first anointing your hands with oil, work the horn into a mass, and print or mould it into any shape you please.

167. TO MAKE MOULDS OF HORN.

If you wish to take the impression of any coin, medal, &c., previously anoint it with oil, then lay the horn shavings over it in its softened state; when dry the impression will be sunk into the horn, and this will serve as a mould to reproduce, either by plaster of Paris, putty and glue, or isinglass and ground egg-shells, the exact resemblance of the coin or medal.

168. TO CAST FIGURES IN IMITATION OF IVORY.

Make isinglass and strong brandy into a paste, with powder of egg-shells, very finely ground; you may give it what colour you please, but cast it

warm into your mould, which you previously oil over; leave the figure in the mould till dry, and you will find, on taking it out, that it bears a very strong resemblance to ivory.

169. TRUE GOLD POWDER.

Put some gold leaf, with a little honey or thick gum water, (whenever I speak of gum I mean gum arabic,) into an earthen mortar, and pound the mixture till the gold is reduced to very small particles; then wash out the honey or gum repeatedly with warm water, and the gold will be left behind in the state of powder, which, when dried, is fit for use.

170. TRUE GOLD POWDER.

Another, and perhaps better method of preparing gold powder is to heat a prepared amalgam of gold in a clean open crucible, (an amalgam of any metal is formed by a mixture of quicksilver with that metal) continuing a very strong heat till all the mercury has evaporated, stirring the amalgam all the while with a glass rod; when the mercury has entirely left the gold, grind the remainder in a

Wedgewood's mortar, with a little water, and when dried it will be fit for use. The subliming the mercury is, however, a process injurious to the health.

171. COLOUR HEIGHTENING COMPOSITIONS.

For yellow gold, dissolve in water 6ozs. of saltpetre, 2ozs. of copperas, 1oz. of white vitriol, and 1oz. of alum. If wanted redder, add a small portion of blue vitriol.

172. FOR GREEN GOLD.

Dissolve in water a mixture consisting of $1\frac{1}{2}$ oz. of saltpetre; vitriol and sal-ammoniac, $1\frac{1}{4}$ oz. of each, and 1oz. verdigris.

173. FOR RED GOLD.

Take $1\frac{1}{2}$ oz. of red ochre in fine powder, the same quantity of calcined verdigris, $\frac{1}{2}$ oz. of calcined borax, and 4ozs. of melted yellow wax; the verdigris must be calcined, or else, by the heat applied in melting the wax, the vinegar becomes so concentrated as to corrode the surface, and make

it appear speckled. These last three are colours for heightening compositions.

174. MOSAIC GOLD.

Mosaic gold, or aurum mosaicum, is used for inferior articles. It is prepared in the following manner: 1lb. of tin is melted in a crucible, and $\frac{1}{2}$ lb. of purified quicksilver added to it; when this mixture is cold, it is reduced to powder, and ground with $\frac{1}{2}$ lb. of sal ammoniac, and 7ozs. of flower of sulphur, till the whole is thoroughly mixed; they are then calcined in a matrass, and the sublimation of the other ingredients leaves the tin converted into the aurum mosaicum, which is found at the bottom of the glass, like a mass of bright flakey gold powder. Should any black or discolored particles appear, they must be removed. The sal ammoniac used here must be very white and clear, and the mercury quite pure and unadulterated. When a shade of deeper red is required, it can easily be obtained by grinding a very small quantity of red lead along with the above materials.

175. DUTCH OR GERMAN GOLD.

A gilding powder is sometimes made from Dutch

gold, which is sold in books at a very low price. This is treated in the same way as the real gold leaf in making the true gold powder. It is necessary, when this inferior powder is used, to cover the gilding with a coat of clear varnish, otherwise it soon loses its metallic appearance. The same remark applies, though in a less degree, to Mosaic gilding.

176. COPPER POWDER.

This is prepared by dissolving filings or slips of copper with nitrous acid in a receiver. When the acid is saturated, the slips are to be removed ; or, if filings be employed, the solution is to be poured off from what remains undissolved ; small bars are then put in, which will precipitate the copper from the saturated acid, in a powder of the peculiar appearance and colour of copper, and the liquid being poured from the powder, this is to be washed clean of the crystals by repeated levigations.

177 COMMON SIZE.

The size used by painters for most sorts of common work is prepared by boiling in water

pieces of parchment, and of the skins of animals and fins of fish, and evaporating the solution to a proper consistency. It only differs, however, from a solution of glue in containing fewer foreign ingredients, and in not being so strong.

178. DR. JOHN'S VARNISH FOR PLASTER OF PARIS CASTS.

Take of white soap and white wax, each half an ounce, of water two pints; boil them together for a short time in a clean vessel. This varnish is to be applied when cold, by means of a soft brush. It does not sink in, it readily dries, and its effect may be heightened by lightly using a silk pocket handkerchief.

179. GENERAL DIRECTIONS FOR BRONZING.

This art is nothing but a species of painting, but far from being of the most delicate kind. The principal ingredients made use of in it are the true gold powder, the German gold, the aurum mosaicum, and copper powder, (all above described.) The choice of these powders is, of course,

to be determined by the degree of brilliancy you wish to obtain. The powder is mixed with strong gum water or isinglass, and laid on with a brush or pencil; and when not so dry as to have still a certain clamminess, a piece of soft leather wrapped round the finger, is dipped in the powder and rubbed over the work; when the work has been all covered with the bronze, it must be left to dry, and any loose powder then cleared away by a hair pencil.

180. BRONZING IN WOOD.

This may be effected by a process somewhat differing from the above, Prussian blue, patent yellow, raw amber, lamp-black, and pipe clay are ground separately with water on a stone, and as much of them as will make a good colour put into a small vessel three-fourths full of size. This mixture is found to succeed best on using about half as much more pipe clay as of any of the other ingredients. The wood, being previously cleaned and smoothed, and coated with a mixture of clean size and lamp-black, receives a new coating with the above compound twice successively, having allowed the first to dry. Afterwards the bronze-

powder is to be laid on with a pencil, and the whole burnished or cleaned anew, observing to repair the parts which may be injured by this operation; next, the work must be coated over with a thin lather of castile soap, which will take off the glare of the burnishing, and afterwards be carefully rubbed with a woollen cloth. The superfluous powder may be rubbed off when dry.

181. IN BRONZING IRON.

The subject should be heated to a greater degree than the hand can bear; and German gold, mixed with a small quantity of spirit-of-wine varnish, spread over it with the pencil; should the iron be already polished, you must heat it well and moisten it with a linen rag dipped in vinegar.

182. BRONZING CASTS OF PLASTER OF PARIS.

There is a method of bronzing casts of plaster of Paris analogous to that which we have above given for bronzing wood, but it is not in much repute. Such figures may be beautifully varnished by means of Dr. John's varnish, receipt No. 178.

Casts of plaster of Paris may be made by receipt No. 167.

183. SHELL-LAC VARNISH.

Dissolve in an iron kettle, one part of pearl-ash in about 8 parts of water; add one part of shell-lac, and heat the whole to ebullition. When the lac is dissolved, cool the solution, and impregnate it with chlorine, till the lac is all precipitated. The precipitate is white, but its colour deepens by washing and consolidation; dissolved in alcohol, lac bleached by the above process yields a varnish which is as free from colour as any copal varnish.

184. CHLORINE FOR SHELL-LAC VARNISH.

This may be formed by mixing intimately eight parts of common salt, and three of the black oxide of manganese in powder; put this mixture into a retort, then pour four parts of sulphuric acid, diluted with an equal weight of water, and afterwards allowed to cool upon the salt and manganese; the gas will then be immediately liberated, and the operation may be quickened by a

moderate heat. A tube leading from the mouth of the retort must be passed into the resinous solution, when the gas will be absorbed, and the lac precipitated.

185. SHELL-LAC VARNISHES OF VARIOUS COLOURS.

These may be made by using any colour in fine powder with the varnish, in the following manner: rub up the colour with a little alcohol or spirits of turpentine till it becomes perfectly smooth, then put it into the cup with the varnish. Shell-lac varnish is the best spirit varnish we have, and may be made any colour by the above process.

186. GOLD OIL-COLOUR, OR SIZE.

The English method of preparing the colour in size, which serves as the ground on which the gold is laid, is, to grind together some red oxide of lead with the thickest drying oil that can be procured, the older the better. To make it work freely, it is mixed, before being used, with a little oil of turpentine, till it is brought to a proper consistence. The above four receipts are used in japanning.

187. JAPANNING.

If it be woodwork you are about to japan, it must be prepared with size, and some coarse material mixed with it to fill up and harden the grain of the wood, (such as may best suit the colour to be laid on,) which must be rubbed smooth with glass paper when dry. In cases of accident, it is seldom necessary to re-size the damaged places, unless they are considerable.

188. GRINDING COLOURS IN JAPANNING.

Be very careful in japanning, to grind your colours smooth in spirits of turpentine, then add a small quantity of turpentine and spirit varnish, lay it carefully on with a camel-hair brush, and varnish it with brown or white spirit varnish, according to the colour.

189. COLOURS REQUIRED IN JAPANNING.

Flake white, red lead, vermillion, lake, Prussian blue, patent yellow, orpiment, ochres, verditers, vandyke brown, umber, lamp-black, and siennas raw and burnt. With these you may match almost

any colour in general use in japanning. For a black japan, it will be found sufficient to mix a little gold-size with lamp-black; this will bear a good gloss, without requiring to be varnished afterwards.

190. TO PREPARE A FINE TORTOISE-SHELL JAPAN, GROUND BY MEANS OF HEAT.

Take 1 gallon of good linseed oil, and $\frac{1}{2}$ lb. of umber; boil them together till the oil becomes very brown and thick, then strain it through a coarse cloth, and set it again to boil; in which state it must be continued till it acquires a consistence resembling that of pitch; it will then be fit for use.

191. DIRECTIONS FOR USING TORTOISE-SHELL JAPAN.

Having thus prepared the varnish or japan, clean well the substance which is to be japanned; then lay vermilion, tempered with shell-lac varnish, or with drying oil, very thinly diluted with oil of turpentine, on the places intended to imitate the more transparent parts of the tortoise-shell; when

the vermilion is dry, brush the whole over with black varnish, tempered to a due consistence with the oil of turpentine. When set and firm, put the work into a stove, where it may undergo a very strong heat, which must be continued a considerable time; if even three weeks or a month it will be the better. This tortoise-shell ground is not less valuable for its great hardness, and enduring to be made hotter than boiling-water without damage, than for the superior beauty and brilliancy of its appearance.

192. TO MAKE CLOTH, SILK, &c., WATER-PROOF.

Mix equal quantities of alum and acetate of lead, and dissolve the mixture in $1\frac{1}{2}$ gallons of boiling-water. When the solution has cooled, remove the supernatant liquid from the sediment, which consists of sulphate of lead, and it is ready for use. Any article of dress, when well saturated in this liquid, and allowed to dry slowly, bears the action of boiling-water, and does not permit it to pass through, although steam and air penetrate it freely.

193. CROCKERY CEMENT.

Dissolve 1oz. of common salt in 1 quart of water, bring to a boil, and put in $1\frac{1}{4}$ lbs. gum shell-lac; when it shall have dissolved, pour into cold water, and work like wax; make into small sticks. This will make crockery as firm as a rock. Directions:—Warm the stick, apply it to the broken edges, then heat the edges, place them together and hold for a minute, and they are firm.

194. A CEMENT FOR CHINA, GLASS-WARE, &c.

Take a thick mucilage of gum arabic, and stir into it plaster of paris to form a thick paste, apply to the edges with a brush, and press firmly together and confine them two or three days, and you will be astonished at their firmness.

195. ANGLER'S SECRET.

The juice of loveage or smellage mixed with any kind of bait, or a few drops of the oil of rhodium; India cockle, also, is sometimes mixed with flour dough, and sprinkled on the surface of still water.

This intoxicates the fish, and makes him turn up on the top of the water, when he is taken and put in a tub of fresh water until he revives, when all is right; he may be eaten without fear; but this will destroy many fish.

196. MORELLA WINE.

Take the juice of morella or tame cherries, and to each quart put 3 quarts of water, and 4lbs. of coarse brown sugar; let them ferment, and skim until worked clear; then draw off, avoiding the sediment at the bottom, bung up, or bottle, which is best for all wines, letting the bottles lie always on the side, either for wines or beers.

197. HAIR DYE.

No. 1. Crystallised nitrate of silver, 1 drachm; soft water, 1oz. No. 2. Sulphide (sulphuret is the same) of potassium, 1 drachm; soft water, 1oz.; wash the beard or hair with soap to remove oil, dry with a towel a little, then apply No. 1, and directly after it No. 2, for a few minutes, alternately, using different tooth-brushes for each No. Clear days are best on which to apply it. As soon

as dry, wash out well with soap. Keep it from shirt bosoms and face, especially No. 1, as it will make the face sore as well as colour it. If you do get it on the skin, cyanide (cyanuret is the same) of potassium, 1 drachm, to 2ozs. of water, will take it off. This last is poison, however, and should not touch sore places, nor be left where children may get at it.

198. TALLOW CANDLES IN IMITATION OF WAX.

Purify melted mutton tallow by throwing in powdered quicklime, then add 2 parts of wax to 1 of tallow. A most beautiful article of candle, resembling wax, will be produced by the mixture. Dip the wicks in lime-water and saltpetre on making.

199. TO STAIN MUSICAL INSTRUMENTS A CRIMSON STAIN.

Take of ground Brazil, 1lb.; water, 3 quarts; cochineal, $\frac{1}{2}$ oz.; boil the brazil in the water for an hour; then strain, and add the cochineal; then boil it gently for half-an-hour, when it will be fit

for use. If you wish a scarlet tint, boil an ounce of saffron in a quart of water, and pass over the work before you stain it. The article must be very clean, and of firwood, or the best sycamore. When varnished over this stain it is most elegant.

200. A PURPLE STAIN FOR VIOLINS, &c.

Take of chipped logwood, 1lb.; of water, 3 quarts; of pearl-ash, 4ozs; of indigo, pounded, 2ozs.; put the logwood in the water, boil well for an hour, then add the pearl-ash and indigo, and when dissolved, you will have a beautiful purple.

201. A BLUE STAIN FOR VIOLINS, &c.

Take of oil of vitriol in a glass bottle, 1lb.; put into it 4ozs. of indigo, and proceed as directed in dyeing.

202. GREEN STAIN FOR VIOLINS, &c.

Take of strong vinegar, 3 pints; of best verdigris, 4ozs. ground fine; of sap green, $\frac{1}{2}$ oz.; of indigo, $\frac{1}{2}$ oz.; mix all together.

203. GENERAL DIRECTIONS FOR DYEING.

The materials should be perfectly clean; soap should be rinsed out in soft water; the article should be entirely wetted, or it will spot; light colours should be steeped in brass, tin, or earthen; and, if set at all, should be set with alum. Dark colours should be boiled in iron, and set with copperas; too much copperas rots the thread.

204. FOR COLOURING SKY BLUE.

Get the blue composition; it may be had at the druggist's, or clothier's, for a shilling an ounce. If the articles are not white, the old colours should be all discharged by soap or a strong solution of tartaric acid, then rinsed; 12 or 16 drops of the composition, stirred into a quart-bowl of warm soft water, and strained if settlings are seen, will dye a great many articles. If you want a deeper colour, add a few drops more of the composition. If you wish to colour cotton goods, put in pounded chalk to destroy the acid, which is very destructive to all cotton; let it stand until the effervescence subsides, and then it may be safely used for cotton or silk.

205. FOR LILAC COLOUR.

Take a little pinch of archil, and put some boiling-hot water upon it, add to it a very little lump of pear-lash. Shades may be altered by pear-lash, common salt, or wine.

206. TO COLOUR BLACK.

Logwood and cider, boiled together in iron, water being added for the evaporation, makes a good and durable black. Rusty nails or any bits of rusty iron, boiled in vinegar, with a small piece of copperas, will also dye black; so will ink powder, if boiled with vinegar. In all cases, black must be set with copperas.

207. TO DYE LEMON COLOUR.

Peach-leaves, bark scraped from the barberry-bush, or saffron, steeped in water, and set with alum, will colour a bright lemon, drop in a little gum-arabic to make the articles stiff.

208. TO DYE ROYAL PURPLE.

Soak logwood chips in soft water until the

strength is out, then add a teaspoonful of alum to a quart of the liquor ; if this is not bright enough, add more alum, rinse and dry. When the dye is exhausted, it will colour a fine lilac.

209. TO DYE SLATE COLOUR.

Tea grounds, boiled in iron vessels, set with copperas, makes a good slate colour. To produce a light slate colour, boil white maple bark in clear water, with a little alum. The bark should be boiled in brass utensils. The goods should be boiled in it, and then hung where they will drain and dry.

210. TO DYE SCARLET.

Dip the cloth in a solution of alkaline or metallic salt, then in a cochineal dye, and let it remain some time, and it will come out permanently coloured. Another method : $\frac{1}{2}$ lb. of madder, $\frac{1}{2}$ oz. of cream tartar, and 1oz. of marine acid to 1lb. of cloth ; put it all together, and bring the dye to a scalding heat ; put in your materials, and they will be coloured in ten minutes. The dye must be only scalding hot. Rinse your goods in cold water as soon as they come from the dye.

211. TO COLOUR A BRIGHT MADDER.

For 1lb. of yarn or cloth, take 3ozs. of madder ; 3ozs. of alum ; 1oz. of cream tartar ; prepare a brass kettle with 2 gallons of water, and bring the liquor to a steady heat, then add your alum and tartar, and bring it to a boil ; put in your cloth, and boil it two hours ; take it out, and rinse it in cold water ; empty your kettle, and fill it with as much water as before ; then add your madder ; rub it in fine in the water before your cloth is in. When your dye is as warm as you can bear your hand in, then put in your cloth, and let it lie one hour, and keep a steady heat ; keep it in motion constantly, then bring it to a boil fifteen minutes, then air and rinse it. If your goods are new, use 4ozs. of madder to a lb.

212. TO COLOUR GREEN.

If you wish to colour green, have your cloth as free as possible from the old colour, clean, and rinsed ; and, in the first place, colour it deep yellow. Fustic, boiled in soft water, makes the strongest and brightest yellow dye ; but saffron, barberry-bush, peach-leaves, or onion-skins, will

answer pretty well. Next take a bowlful of strong yellow dye, and pour in a great spoonful or more of the blue composition, stir it up well with a clean stick, and dip the articles you have already coloured yellow into it, and they will take a lively grass-green. This is a good plan for old bombazet-curtains, dessert-cloths, old flannel for desk-coverings, &c.

213. TO DYE STRAW COLOUR AND YELLOW.

Saffron, steeped in earthen and strained, colours a fine straw colour. It makes a delicate or deep shade, according to the strength of the tea. Colouring yellow is described in receipt No. 212. In all these cases a little bit of alum does no harm, and may help to fix the colour. Ribbons, gauze handkerchiefs, &c., are coloured well in this way, especially if they be stiffened by a bit of gum-arabic, dropped in while the stuff is steeping.

214. TO DYE A DRAB COLOUR.

Take plum-tree sprouts, and boil them an hour or more; add copperas, according to the shade you

wish your articles to be. White ribbons take very pretty in this dye.

215. TO DYE PURPLE.

Boil an ounce of cochineal in a quart of vinegar. This will afford a beautiful purple.

216. TO DYE BROWN.

Use a teaspoonful of soda to an ounce of cochineal, and a quart of soft water.

217. TO COLOUR PINK.

Boil 1lb. of cloth an hour in alum water, pound $\frac{3}{4}$ of an oz. of cochineal and mix with 1oz. of cream of tartar; put in a brass kettle, with water, enough to cover the cloth; when about blood-heat put in your cloth, stir constantly, and boil about fifteen minutes.

218. TO DYE A COFFEE COLOUR.

Use copperas in a madder-dye, instead of madder compound.

219. TO DYE NANKIN COLOUR.

The simplest way is to take a pailful of lye, to which put a piece of copperas half as big as a hen's egg; boil in a copper or tin kettle.

220. TO MAKE ROSE COLOUR.

Balm blossoms, steeped in water, colour a pretty rose colour. This answers very well for the linings of children's bonnets, for ribbons, &c.

221. TO DYE STRAW AND CHIP BONNETS
BLACK.

Boil them in strong logwood liquor 3 or 4 hours, occasionally adding green copperas, and taking the bonnets out to cool in the air, and this must be continued for some hours. Let the bonnets remain in the liquor all night, and the next morning take them out, dry them in the air, and brush them with a soft brush. Lastly, rub them inside and out with a sponge moistened with oil, and then send them to be blocked. Hats are done in the same way.

222. TO DYE WHITE GLOVES A BEAUTIFUL PURPLE.

Boil 4oz. of logwood, and 2oz. of roche-alum, in 3 pints of soft water, till half wasted; let it stand to be cold after straining. If they be old gloves let them be mended; then do them over with a brush, and when dry repeat it. Twice is sufficient unless the colour is to be very dark; when dry, rub off the loose dye with a coarse cloth; beat up the white of an egg, and with a sponge rub it over the leather. The dye will stain the hands, but wetting them with vinegar before they are washed will take it off.

223. TO BLEACH STRAW HATS, &c.

Straw hats and bonnets are bleached by putting them, previously washed in pure water, in a box with burning sulphur; the fumes which arise unite with the water on the bonnets, and the sulphurous acid, thus formed, bleaches them.

224. TO DYE SILKS BLACK.

To 8 gallons of water add 4ozs. of copperas;

immerse for 1 hour and take out and rinse; boil 2lbs. logwood chips, or $\frac{1}{2}$ lb. of extract; $\frac{1}{2}$ lb. of fustic; and for white silks, $\frac{1}{2}$ lb. of nicwood; dissolve 2lbs. of good bar-soap in a gallon of water; mix all the liquids together, and then add the soap, having just enough to cover the silk; stir briskly until a good lather is formed, then immerse the silk and handle it lively. The dye should be as warm as the hand will bear; dry quickly and without rinsing. The above is enough for 10 yards or one dress.

225. TO COLOUR YELLOW ON COTTON.

Wet 6lbs. of goods thoroughly; and to the same quantity of water add 9oz. of sugar of lead; and to the same quantity of water in another vessel, add 6oz. of bichromate of potash; dip the goods first into the solution of sugar of lead, and next into that of the potash, and then again into the first; wring out, dry, and afterwards rinse in cold water.

226. FOR STAINING GLASS—No. 1 FLUX.

Minium, or red lead, 3 parts; white sand,

washed, 1 part. This mixture is melted, by which it is converted into a greenish-yellow glass.

227. No. 2 FLUX.

Of No. 1, 8 parts; fused borax, in powder, 1 part. This mixture is melted.

228. No. 3 FLUX.

Fused borax, 5 parts; calcined flint, 3 parts; pure minium, 1 part. This mixture is also melted. The above fluxes are used in procuring the different colours for staining glass.

229. INDIGO BLUE.

Oxide of cobalt, 1 part; flux No. 3, 2 parts.

230. TURQUOISE BLUE.

Oxide of cobalt, 1 part; oxide of zinc, 3 or 4 parts; flux No. 3, 6 parts; melt and pour out. If it is not sufficiently green, increase the zinc and flux.

231. AZURE BLUE.

Oxide of cobalt, 1 part; oxide of zinc, 2 parts; flux No. 2, 8 parts; melt them together.

232. DEEP AZURE BLUE.

Oxide of cobalt, 1 part; oxide of zinc, 2 parts; flux No. 2, 5 parts. The beauty of this colour depends on the proportion of flux. As little as possible is to be used; it must, however, be brilliant. Sometimes less is used than the proportion indicated.

233. SKY BLUE.

Oxide of cobalt, 1 part; oxide of zinc, 2 parts; flux No. 2, 12 parts; pound up, melt, and pour out.

234. EMERALD GREEN.

Oxide of copper, 1 part; antimoniac acid, 10 parts; flux No. 1, 30 parts; pulverize together, and melt.

235. BLUEISH GREEN.

Green oxide of chromium, 1 part; oxide of cobalt, 2 parts; triturate, and melt at a high heat. The product is a button slightly melted, from which is removed the portion in contact with the crucible. This button is pounded up, and three parts of flux No. 3, for one of the button, are added to it.

236. GRASS GREEN.

Green oxide of chromium 1 part, flux No. 3, 3 parts, triturate and melt.

237. DEEP YELLOW.

Antimonic acid 2 parts, subsulphate of iron 1 part, flux No. 1, 10 parts; melt and pour out. The subsulphate of iron may be increased a little, the proportions of flux vary.

238. JONQUILLE YELLOW FOR FLOWERS.

Litharge 18 parts, sand 6 parts. The product of the calcination of equal parts of lead and tin

2 parts, carbonate of soda 1 part, antimoniac acid 1 part, rub together, or triturate, and melt.

239. WAX YELLOW.

Litharge 18 parts, sand 4 parts, oxide of antimony 2 parts, sienna earth 2 parts; melt. If it is too deep the proportion of sienna earth may be decreased.

240. ORANGE YELLOW.

Chromate of lead 1 part, minium 3 parts.

241. BRICK RED.

Yellow No. 240 12 parts, red oxide of iron 1 part.

242. DEEP BLOOD RED.

Subsulphate of iron, calcined in a muffle until it becomes a beautiful capucine red 1 part, flux No. 2, 3 parts; mix without melting.

243. BROWN YELLOW OCHRE.

Yellow ochre No. 244, 10 parts, sienna earth 1 part; triturate without melting.

244. DEEP YELLOW OCHRE.—CALLED
YELLOW BROWN.

Subsulphate of iron 1 part, oxide of zinc 1 part,
flux No. 2, 5 parts ; triturate without melting.

245. PURE PURPLE.

The purple powder of Cassius mixed while moist
with flux No. 3, and sometimes a little chloride of
silver previously melted with flux No. 3. If the
purple, when prepared, does not melt sufficiently
easy, some flux may be added when it is dry.

246. DEEP VIOLET.

The purple of Cassius, in place of flux No. 3,
flux No. 1 is mixed with it. Sometimes a little of
blue No. 233 is added.

247. FLESH RED.

The sulphate of iron, put in a small crucible,
and lightly calcined, produces a suitable red oxide
Those which have the desired tone are selected.

All the flesh reds are made in this way, and vary only in the degree of heat which they receive.

248. HAIR BROWN.

Yellow ochre, No. 244, 15 parts; oxide of cobalt, 1 part; well triturated and calcined, in order to give the tone to it.

249. LIVER BROWN.

Oxide of iron made of a red brown, and mixed with three times its weight of flux No. 2. A tenth of sienna earth is added to it if it is not sufficiently deep.

250. WHITE.

The white enamel of commerce in cakes.

251. YELLOWISH GRAY.

Yellow No. 252, 1 part; blue, No. 233, 1 part; oxide of zinc, 2 or 3 parts; flux No. 2, 5 parts; sometimes a little black is added, according to the tone which the mixture produces. The proportions of the blue and yellow vary.

252. YELLOW FOR BROWNS & GREENS.

Antimonic acid, 2 parts ; sulphate of iron 1 part ; flux No. 1, 9 parts. This colour is melted and sometimes a little Naples yellow is added if it is too soft, i.e., melts too easily.

253. BLUEISH GRAY FOR MIXTURES.

Blue previously made by melting together three parts of flux No. 1, and one part of the mixture of oxide of cobalt, 8 parts ; oxide of zinc, 1 part ; sulphate of iron calcined at a forge heat, 1 part ; flux No. 2, 3 parts ; triturate and add a little manganese in order to render it more gray.

254. GRAYISH BLACK FOR MIXTURES.

Yellow ochre, No. 244, 15 parts ; oxide of cobalt, 1 part ; triturate and calcine in a crucible until it has the desired tone. A little oxide of manganese is added in order to make it blacker ; sometimes a little more of oxide of cobalt.

255. DEEP BLACK.

Oxide of cobalt, 2 parts ; oxide of copper, 2

parts; oxide of manganese, 1 part; flux No. 1, 6 parts; fused borax, $\frac{1}{2}$ part; melt and add oxide of manganese, 1 part; oxide of copper, 2 parts; triturate without melting.

256. GENERAL DIRECTIONS.

The colours thus prepared after having been rubbed up on a plate of ground glass with the spirits of turpentine or lavender, thickened in the air are applied with a hair pencil. Before using them, however, it is necessary to try them on small pieces of glass, and expose them to the fire, to ascertain if the desired tone of colour is produced. The artist must be guided by these proof pieces in using his colours. The proper glass for receiving these colours should be uniform, colourless, and difficult of fusion. For this reason crown glass made with a little alkali or kelp is preferred. A design must be drawn upon paper and placed beneath the plate of glass. The upper side of the glass being sponged over with gum-water affords, when dry, a surface proper for receiving the colours, without the risk of their running irregularly, as they would be apt to do on the slippery glass. The artist draws on the plate, with a fine

pencil all the traces which mark the great outlines and shades of the figures. This is usually done in black, and afterwards, when it is dry, the vitrifying colours are laid on by means of larger hair pencils. The yellow formed with chloride of silver is generally laid on the back of the glass, for it is apt to run with the other colours while heating.

The pigments used in painting on glass are principally metallic oxides and chlorides, and as, in most of these, the colour is not brought out until after the painting is submitted to heat, it is necessary to ascertain beforehand if the colours are properly mixed by painting on slips of glass, and exposing them to heat in a muffle. The painter is guided by these trial pieces in laying on his colours. To fire the paintings a furnace with a muffle is used. The muffles are made of refractory clay.

257. WHITE COATING FOR GOLD VARNISHES.

A quart of strong parchment size and half a pint of water are to be made quite hot, and to these are to be added, (in small portions from time to

time,) two good handfuls of common whiting, passed through a fine sieve; this mixture is to be left to infuse for half an hour, when it is to be stirred carefully so that the amalgamation may be perfect. This coating is preferable to any glue or cement for coating picture-frames, &c., on which is to be laid the tin or silver foil, to be varnished with gold varnishes or lackers.

258. LEAD COLOURED PAINT.

Whiting, 112lbs.....	\$1.12
Blue-black, 5lbs.....	0.25
White lead ground in oil, 28lbs....	2.24
Road-dirt, 56lbs.....	0.10
Lime-water, 5 galls.....	0.05
Residue of the oil, $2\frac{1}{4}$ galls.....	1.25

Weights, 256lbs..... \$5.01

To the above add 2 galls. of the incorporated oil, and 2 galls. of the linseed oil to thin it for use, and it will not exceed two cents and a quarter. The lime-water, whiting, road-dirt, and blue-black must be first mixed together, then add the ground lead, first blending it with $2\frac{1}{2}$ galls. of the pre-

pared fish oil ; after which, thin the whole with 2 galls. of linseed oil and 2 galls. of incorporated oil, and it will be fit for use. For garden doors, and other work liable to be in constant use, a little spirits of turpentine may be added to the paint whilst laying on, which will have the desired effect.

259. BRIGHT GREEN PAINT.

112 lbs. yellow ochre in powder, at 5cts. per lb.....	\$ 5.50
168 lbs. road-dust.....	0.25
112 lbs. wet blue, at 20cts. per lb...	22.40
10 lbs. blue-black, at 5cts. per lb...	0.50
6 galls. of lime-water.....	0.06
4 galls. fish oil, prepared.....	2.40
7½ galls. incorporated oil	4.28
7½ galls. linseed oil, at 90cts. per gal	6.75
<hr/>	
592 lbs.....	\$42.24

It will be seen that the bright green paint costs but about 7cts. per lb., ready to lay on ; and the inventor challenges any colour-man or painter to produce a green equal to it for five times the price. After painting, the colour left in the pot may be

covered with water to prevent it from sinking, and the brushes, as usual, should be cleaned with the painting-knife, and kept under water. A brighter green may be formed by omitting the blue-black. A lighter green may be made by the addition of 10lbs. of ground white lead. A variety of greens may be obtained by varying the proportions of the blue and yellow. Observe that the wet blue must be ground with the incorporated oil, preparatory to its being mixed with the mass.

260. STONE-COLOURED PAINT.

Lime-water, 4 galls.....	\$0.04
Whiting, 112lbs.....	1.12
White lead, ground, 28lbs.....	2.24
Road-dust, 56lbs.....	0.10
Prepared fish oil, 2 galls.....	1.20
Incorporated oil, $3\frac{1}{2}$ galls.....	2.00
Linseed oil, $3\frac{1}{2}$ galls.....	3.15
	—
Weights, 293lbs.....	\$9.85

The above stone-colour fit for use, is not three and a half cents per pound.

261. BROWN-RED COLOURED PAINT.

Lime-water, 8 galls.....	\$ 0.08
Spanish brown, 112lbs.....	3.36
Road-dust, 224lbs.....	0.40
4 galls. of fish oil.....	2.40
4 galls. incorporated oil.....	2.28
4 galls. linseed oil	3.60

Weight, 501lbs..... \$12.12

This paint is scarcely two and a half cents per pound. The Spanish brown must be in powder.

262. A GOOD CHOCOLATE COLOURED
PAINT.

This is made by the addition of blue black in powder, or lamp-black to receipt No. 261, till the colour is to the painter's mind; and a lighter brown may be formed by adding ground white lead. By ground lead is meant white lead ground in oil.

263. YELLOW PAINT.

This is prepared with yellow ochre in powder,

to receipt No. 261, in the same proportion as Spanish brown.

264. BLACK PAINT.

This is also prepared in the same proportion, as receipt No. 261, using lamp-black or blue-black, instead of Spanish brown.

265. WHITE PAINT.

Slack a peck of nice, clean, fresh lime in a covered vessel, with water which is boiling hot; when well slacked, strain it well, then add to it $1\frac{1}{2}$ lbs. of finely ground rice; let the rice be boiled to a thin paste, and stirred in while very hot; $\frac{1}{2}$ peck of common salt, well dissolved in warm water; $\frac{1}{2}$ lb. of clean glue, dissolved in water; and $\frac{1}{4}$ lb. of whiting; when well mixed, add 5 gallons of very hot water, then stir well, and let stand a few days well covered. Put it on hot, and it will stand the weather as well as a good deal of white lead. You may colour this paint to suit your taste, using and stirring in well Spanish brown for a red pink colour. Take common clay finely powdered, and mixed well with Spanish brown for

a reddish stone-colour. For yellow colour use yellow ochre if you please, but chrome yellow makes a richer colour and less does. You may make the colours dark or light according to the quantity of colouring matter used.

266. COMPOUND COLOURED PAINTS, OR COLOURS ARISING FROM MIXTURE.

The various colours that may be obtained by the mixture of other colours, are innumerable. I only propose here to give the best and simplest modes of preparing those which are required for use. Compound colours, formed by the union of only two colours, are called by painters virgin tints. The smaller the number of colours of which any compound colour is composed, the purer and the richer it will be. They are prepared as follows:

267. LIGHT GRAY.

This is made by mixing white lead with lamp-black, using more or less of each material, as you wish to obtain a darker or lighter colour.

268. BUFF COLOUR.

This is made from yellow ochre and white lead.

269. SILVER OR PEARL GRAY.

Mix white lead, indigo, and a very light portion of black, regulating the quantities by the shade you wish to obtain.

270. FLAXEN GRAY.

This is obtained by a mixture of white lead and Prussian blue, with a small quantity of lake.

271. BRICK COLOUR.

This is prepared by mixing yellow ochre, and red lead, with a little white lead.

272. OAK WOOD COLOUR.

Mix together three-fourths white lead, and one-fourth part umber and yellow ochre; the proportions of the last two ingredients being determined by the required tints.

273. WALNUT TREE COLOUR.

Two-thirds white lead, and one-third red ochre,

yellow ochre, and umber, mixed according to the shade sought. If veining is required, use different shades of the same mixture, and for the deepest places, black.

274. JONQUIL.

Mix together yellow, pink, and white lead. This colour is only proper for distemper.

275. LEMON YELLOW.

Mix together realgar and orpiment; some object to this mixture on account of the poisonous nature of the ingredients. The same colour can be obtained by mixing yellow-pink with Naples yellow; but it is then only fit for distemper.

276. ORANGE COLOUR.

For this colour mix red lead and yellow ochre.

277. VIOLET COLOUR.

Make, by mixing vermillion, or red lead, with black or blue, and a small portion of white: ver-

milion is far preferable to red lead, in mixing this colour.

278. PURPLE.

Made by mixing dark-red with violet-colour.

279. CARNATION.

Mix together lake colour and white.

280. GOLD COLOUR.

This is procured by mixing massicot, or Naples yellow, with a small quantity of realgar, and a very little Spanish white.

281. OLIVE COLOUR.

This may be obtained by various mixtures: black and a little blue, mixed with yellow; yellow-pink, with a little verdigris and lamp-black; or ochre and a small quantity of white, will also produce a kind of olive colour. For distemper, indigo and yellow-pink, mixed with white lead or Spanish white, must be used. If veined, it should be done with umber.

282. LEAD COLOUR.

Mix together indigo and white lead or whiting.

283. CHESTNUT COLOUR.

Mix red-ochre and black, for a dark-chestnut. To make it lighter, employ a mixture of yellow-ochre.

284. LIGHT TIMBER COLOUR.

For this colour mix together spruce-ochre, white and a little umber.

285. FLESH COLOUR.

Mix lake, white-lead, and a little vermilion.

286. LIGHT WILLOW GREEN.

This is made by mixing white with verdigris.

286. GRASS GREEN.

For this mix yellow-pink with verdigris. An

endless variety of greens can be obtained by the mixture of blue and yellow in different proportions, with the occasional addition of white lead.

287. STONE COLOUR.

Mix white with a little spruce-ochre.

288. DARK LEAD COLOUR.

Mix black and white with a little indigo.

289. FAWN COLOUR.

Mix white lead, stone-ochre, and a little vermilion.

290. CHOCOLATE COLOUR.

Mix lamp-black and Spanish brown. On account of the fatness of the lamp-black, mix some litharge and red lead.

291. PORTLAND STONE COLOUR.

Mix umber, yellow ochre, and white lead. The
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variety of shades of brown that may be obtained, are nearly as numerous as those of green.

292. TO IMITATE MAHOGANY.

Let the first coat of painting be white lead, the second orange, and the last burned umber or sienna; imitating the veins according to your taste and practice.

293. TO IMITATE WAINSCOAT.

Let the first coat be white, the second half white and half yellow-ochre, and the third yellow-ochre only. Shadow with umber or sienna.

294. TO IMITATE SATIN WOOD.

Take white for your first coating, light blue for the second, and dark blue or dark green for the third.


295. TURNER'S PATENT YELLOW PAINT

When sea-salt is made into a paste with litharge, it is decomposed, its acid unites with the litharge,

and the soda is set free. Hence Turner's patent process for decomposing sea-salt, which consists in mixing two parts of the former with one of the latter, moistening and leaving them together for about twenty-four hours. The product is then washed, filtered, and evaporated, by which soda is obtained. A white substance is now left undissolved; it is a compound of muriatic acid and lead, which, when heated, changes its colour, and forms Turner's yellow; a very beautiful colour, much in use among coach-painters.

296. TO PAINT IN IMITATION OF BLACK WALNUT.

Wash the surface of the wood with weak alum-water, after being well sand-papered; then go over it with linseed oil, coloured with murat amber and red lead. It is better to have this colour rather light, and renew the application; when this has sufficiently dried, go over the surface with a strong sizing of transparent glue, and then use two castors of copal varnish. Any good grained pine will bear a very close resemblance to walnut, and the surface will be nearly as hard.

 For mixing the foregoing paints it is impossible to lay down any particular rule as to

quantity, as each person mixes them of a shade to suit his own taste. They are mixed with oil and a little turpentine, and sometimes a little japan is added to assist in drying. When they are not mixed in this way the particular mode is mentioned.

297. RULES FOR MAKING PICKLES.

Select the best vinegar, for on this will depend the quality of your pickles; use glass bottles or stone jars for your pickles, never use earthenware glazed; use wooden knives and forks in making; leave the jars three-fourths full of the articles to be pickled; then fill the jar or bottle with the vinegar. If you add alum at all let it be very little; look your pickles over occasionally and remove any that may not be doing well. Small cucumbers, beans, green plums, tomatoes, onions, and radish pods, may be used for assorted pickles; one red pepper for forty or fifty cucumbers is sufficient; if the vinegar on pickles becomes white or weak, take it out and scald and skim it, then return it to the pickles.

298. ASPARAGUS PICKLED.

Cut and wash the heads of the largest aspara-

gus; place them in cold water for two hours; scald carefully in salt and water, then lay on a cloth till cool; make a pickle of salt and vinegar, and boil it; to one gallon of pickles put a quarter of an ounce of mace, two nutmegs, a quarter of an ounce of whole pepper, and pour your pickle hot over them, cover tight with a cloth, and let stand a week, then boil the pickle, and let stand a week again, and boil again, when cold cover closely.

299. BEANS AND FRENCH BEANS PICKLED.

Lay them in salt and water for nine days; then add a little vinegar and boil them in the liquor; when they become green strain them, wipe them dry, and put the beans into the jar; boil some vinegar, ginger, mace, pepper, cloves, and mustard seed, all bruised, and while hot pour it on the beans; cover them close when cold.

300. TO PICKLE RED CABBAGE.

Take the quarter of a purple head of cabbage, cut out the stalk, then slice it down endways, put them on a drying sieve, sprinkle each layer of

cabbage with salt, which let lay and drain for two or three days, then put into a jar, boil some vinegar with spice tied up in a muslin bag, cut a beet root of good colour into slices; the branches of cauliflower cut off after it has lain in salt will look and be of a beautiful red; put it into a stone jar and pour boiling vinegar over it.

301. TO PICKLE CUCUMBERS.

Lay them upon dishes, sprinkle salt over them, let them lie a week, drain them off, and put them into stone jars, pour boiling vinegar over them, place them near the fire, cover them well with vine leaves, and if not a good green pour off the vinegar and boil it again; cover them with fresh vine leaves, and continue doing so until they are a good colour; as, to make a better green, you must use a mettle stew pan or brass kettles, which are very poisonous; use wooden spoons with holes to dish all pickles, keeping them always well covered and free from air.

302. TO PICKLE ONIONS.

Peel the onions till they look white, boil some

strong salt and water and pour it over them ; let them stand in this twenty-four hours ; keep the vessel closely covered to retain the steam ; after this wipe the onions quite dry, and when they are cold pour boiling vinegar, with ginger and white pepper over them ; the vinegar must cover the onions.

303. TO PICKLE MUSHROOMS.

These are pickled in salt water and brandy, but they are of little advantage.

304. RAILROAD SYSTEM OF HORSE TRAINING.

This excellent and very simple method of horse training is nearly all accomplished by what is called the persuader or bit ; which is made as follows : take a piece of strong rope eight or ten feet long and a quarter of an inch thick, then part the horse's mane in the centre, turning one half towards the ears, and the other towards the back of the horse ; next tie the rope by one end in a hard knot that will not slip—not too tightly—round the horses' neck in the place at which the mane is divided, having the knot on the right side of the neck ; then pass the loose end of the rope

forwards, along the right side of the neck, into the horse's mouth and back along the left side of the neck to that part of the rope which surrounds the horse's neck, underneath which it is passed; then take the loose end of the rope in your hand, and you have the persuader or bit completed. By pulling on the end which you now hold, you draw his mouth up towards his throat, and can thereby inflict the most excruciating torture that is possible for a horse to undergo, and the beauty of it is, without the least injury to the animal. One pull on this persuader is more dreaded by a horse than a whole day's flogging with a raw-hide. In fact he cannot stand it; no matter how ugly his tricks may be, such as kicking, balking or anything else, if you use the persuader on him at the time, you can conquer him at once; make him as meek as a lamb, and glad to do any thing to escape the torture inflicted by the persuader. A few times is all you will have to use it, even on the most sulky animal, until you will see no more of his tricks, and he is completely conquered.

305. TO HALTER WILD COLTS.

How to approach and halter the wildest colt of

any age without danger, and lead him quietly, is as follows: choose a large floor, that of a wagon-house answers well, strew it over with straw two or three inches deep, turn your colt into it, follow him in with a good whip, shut the door, and he will clear to the farthest corner, follow him, and whip him well on the hips, he will clear to another corner, follow him, treat him in the same manner, and he will soon begin to turn his head towards you, then stop and bid him come to you, if he does not come, lay on the whip again, being always careful not to touch him about the head or shoulders, but always about the hips, in a short time he will come to you when you bid him, then rub his ears, nose, neck, chest, &c., and pet him all you can; halter and lead him about the floor; if at any time he clears from you, pay the whip well on his hips until he comes to you again; after a little use him the same way in a small yard, and after this you can do as you like with him in any place.

306. HORSES WITH TENDER EARS.

How to make a horse, that is afraid of his head or ears, easy to bridle or halter, is as follows:—if

your horse is very fractious and wild, you will need to treat him according to receipt No. 305, first ; at all events you will want the floor well covered with straw, then raise the left fore leg and strap it, so that your horse will stand on three legs, then tie a strap just above his right fore foot, and standing on the left side of the horse, holding the strap in your hand, chirp to him, and the moment he attempts to move forwards, he is on his knees ; you may then fasten the strap to that on the left leg, or hold it in your hand, as you please ; then after the horse gets done struggling and working, rub his nose and ears gently, and put the halter on and take it off repeatedly, to show him that it may be done without hurting him, and in a short time he will not mind the halter or bridle.

307. HOW TO CONTROL A VICIOUS HORSE.

How to acquire the most perfect control over the most vicious and wildest horse, in a short time, without the use of drugs or charms, is by going according to receipts No. 305 and No. 306, and sometimes you may have to use the persuader.

308. TO BREAK A WILD COLT.

How to break the wildest colt in a short time, so that a boy 14 years old can ride or handle him in perfect safety. This is done by means of the persuader, receipts No. 305 and No. 306, and if the boy is to ride him, after the horse is on his knees, as directed in receipt No. 306, and the horse is tired out by struggling, then let somebody get on his back, sit there for a while, then move on to his shoulders, and back unto his hips, and so work round the horse until he does not mind it, and has no fear from it. When he has a few lessons like this, any lad may ride him in safety.

309. TO MAKE A STALLION LIE DOWN.

How to make the worst stallion lie down, and allow you to perform any surgical operation on him that you wish, without the assistance of any one. If the horse is very ugly, you may need to follow, first, receipt No. 305, and, perhaps, use the persuader, but it is principally done by receipt No. 306, with this addition: when you have the horse on his knees, you standing on his left side, and holding the strap which is attached to his right

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fore foot in your hand, as taught in receipt No. 306, then put a headstall on him, and to its ring on the left side of his mouth, tie firmly a stick about an inch and a half thick, which, let run up on the left side of his neck, to the top of his shoulders, then tie the strap, which is attached to the right foot, to this poll ; now pull the horse over on his left side, and you have him powerless, his fore feet are drawn up, and on account of the pole he cannot raise his head, so that you have perfect control over him to do as you please.

310. PULLING AT THE HALTER.

To break a horse from pulling at the halter. This is done by means of the persuader ; if he pulls once on this, he will never try it again.

311. WILD STALLIONS.

How to break the wildest stallion in a short time, so that a boy can lead him in perfect safety. This is done by putting the horse through a regular course of training, according to receipts Nos. 305 and 306, and the use of the persuader.

312. BALKY HORSES.

How to make the worst of balky horses pull true. Whenever your horse balks, if you there and then, openly and publicly, make use of the persuader, and jerk him well with it, he will be glad to go, and in a short time you will have to use it no more ; but as long as this system is kept secret, and when a horse balks, you do not then use the persuader, you will never break the horse from balking.

313. SHOEING HORSES.

How to make a horse stand to be shod. This is accomplished by having the persuader fitted on, and whenever the horse makes an attempt to be ugly, pull on the persuader, and he will very soon be glad to stand as quiet as a lamb.

314. "WHOA."

How to make a horse understand the word "whoa" so perfectly, that he will always stop when spoken to, no matter what may occur to frighten him. This is done by having the persuader fitted on, and whenever you say "whoa,"

in a loud and stern tone of voice, pull on the persuader, and as it is impossible for a horse to fear or dread any thing else as much as this, he will stop instantly, no matter what may occur to frighten him.

315. THROWING.

How to break a horse off the habit of throwing his rider. This is accomplished by means of the persuader, and receipt 308.

316. SCARING.

How to break a horse off scaring at umbrellas or buffalo robes, so that you may toss them at him without disturbing him. To accomplish this you want to get the horse on his knees, according to receipt No. 306; then bring your robes and umbrellas near him, let him smell them, toss them at him, and throw them over his head carefully, and so continue to work, showing him that they do not harm him, until all fear of them is lost.

317. KICKING HORSES.

How to break the worst class of kicking horses.

To accomplish this, you will want to put the horse through a regular course of training, according to this system, until you have him well conquered; then keep the persuader on, and if he should ever attempt to kick, at that moment jerk well on the persuader, and he will think of every thing but kicking; when he attempts it a few times, and you check him in this manner, he will quit it altogether.

318. TO BIT A HORSE.

How to bit a horse more perfectly, in ten minutes, at a cost of ten cents, than can be done with any other bit and rig, at a cost of five to ten dollars. This bit is what is called the persuader, and it is the best bit that ever was used for biting colts. It puts a most beautiful curve in the neck, and leaves the colt at ease while wearing it. When it is used for this purpose, the end that you hold in your hand in other cases, is now to be tied to that part of the persuader which surrounds the neck of the horse or colt.

319. JOCKEY TRICKS.—TO PRODUCE FOUNDER.

How to make a horse appear as if he was badly

foundered, in one night's time. Take a fine wire, or any substitute, and fasten it tightly round the castor tit, the back side of the pasture joint at night; smooth the hair down nicely over it, and by morning he will walk as stiff as any foundered horse.

320. FOOD AND STARVATION.

How to make a horse stand by his food and starve to death. Grease the front teeth and roof of the mouth with common beef-tallow, and he will not eat until you wash it out; this, in conjunction with the above, will consummate a complete founder.

321. GLANDERS.

How to make a horse appear as if he had the glanders, in one night's time. This is done by melting fresh butter and pouring it into his ears, not too hot.

322. BALKING.

How to make a true pulling horse balk. Take

tincture of cantharides 1oz., and corrosive sublimate 1 drachm ; mix, and bathe his shoulders at night.

323. TO COVER UP HEAVES.

How to cover up the heaves so effectually, that you may work, ride, or run him, and they cannot be detected. This will last from twelve to twenty-four hours, long enough to trade off. Drench the horse with one-fourth pound of common bird shot, and he will not heave until they pass through him.

324. THE COUNTENANCE.

How to put a young countenance on a horse. Make a small incision near the sunk place over the eye, insert the point of a blow-pipe or goose-quil, and blow it up ; close the external wound with thread, and it is done.

325. THE CRIB.

How to cure a horse of the crib, or sucking wind ; saw between the upper front teeth.

326. QUESTIONS.

To teach a horse to answer questions. This is done by pricking him with a pin; for instance, you may say to the horse, is your name Tom? and at that moment prick him with a pin so that he will squeal; then ask him, is your name Sam? don't prick him, and he will not squeal. Then say again is your name Tom, prick him again, and he will squeal; so continue, and after a time he will squeal without being pricked when you ask him the first question, &c.

327. TO NERVE A HORSE.

How to nerve a horse that is lame. Make a small incision about half way from the knee to the joint on the outside of the leg, and at the back part of the shin bone; you will find a small white tendon or cord; cut it off and close the external wound with a stick, and he will walk off on the hardest pavement, and not lame a particle.

328. A HORSE'S AGE.

The following rules will enable any man to

ascertain with tolerable certainty the age of any horse. Every horse has six teeth above and six below; before he arrives at the age of three he sheds his two middle teeth by the young teeth rising and shoving the old ones out of their place. When he arrives at the age of three, he sheds one more on each side of the middle teeth; when four years old he sheds two corner and the last of his fore teeth; between four and five he cuts his under tusks, and when five will cut his upper tusks, and have a mouth full and complete, and the teeth will have hollows of a very dark brown colour. At six years' old the grooves and hollows in a horse's mouth will begin to fill up a little and their tusks have their full growth, with their points sharp, and a little concave. At seven years old, the grooves and hollows will be pretty well filled below. At eight, the whole of the hollows and grooves are filled up, and you see the appearance of what is termed smooth below. At nine years old, the point of the tusk is worn off, and the part that was concave begins to fill up and becomes rounding. Between nine and ten years of age a horse generally loses the marks of the mouth. After nine years old a wrinkle comes on the eyelid at the upper corner of the lower lid, and every year

thereafter he has one well defined wrinkle for each year over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen, &c.

329. HEAD, NECK, OR LUNGS.

How to tell by looking at a horse whether there is any thing the matter with his head, neck or lungs. A knowledge of this is as useful as it is simple. If there is nothing the matter with the head, neck or lungs of a horse, the nostrils will have a clean, healthy, and bright appearance, but if there is, they have always a dirty, muddy, or in some way an unhealthy appearance.

330. PROF. MANDIE'S HORSE TAMING.

Take finely grated horse caster, or the warty excrescence from the horse's leg, oils of rhodium, and cumin, keep these in separate bottles well corked; put some of the oil of cumin on your hand and approach the horse on the windy side that he may smell it; he will then move towards you, then rub some of the cumin on his nose; give him a little of the castor on sugar, salt, or any thing he likes, and get 8 or 10 drops of the oil of

rhodium on the point of his tongue ; you can then get him to do any thing you please. Follow up your advantage by all the kindness and attention possible towards the animal, and your control is certain. This is only fit for nervous horses ; but the railroad system is certain. In all kinds of ugly horses it is the best of methods.

331. BOTTS IN HORSES.

This may be relied on as a certain and safe remedy for botts in horses. When the horse is attacked, pound some common glass very fine, sift it through a fine piece of muslin, take a table-spoonful, put it inside a ball of dough, (not mixed with the dough,) then put it down the horse's throat, and in from two to five minutes the horse will get up and feel and will be well. The moment the glass touches the botts though they may have eaten their way into the coats of the stomach, so that but a small portion is exposed, they will let go their hold, will pucker up and be driven off by the bowels. This remedy is perfectly safe, and is the only certain cure for botts under the sun. Try it.

332. RING BONE AND SPAVIN.

Take of sweet oil, 4 oz. ; spirits of turpentine, 2 ozs. ; oil of stone, $\frac{1}{2}$ oz. Mix and apply three times a day. If the horse is over four years old, or in any case where this is not sufficient, in addition to it, you will fit a bar of lead just above it, wiring the ends together, so it constantly wears upon the enlargement, and the two together, will cure nine cases out of every ten in six weeks.

333. POLL EVIL AND FISTULA.

Take 1 lb. common potash dissolved in $\frac{1}{2}$ pint of water. Add $\frac{1}{2}$ oz. extract of belladonna and 1 oz. gum-arabic dissolved in a little water ; work all into a paste with wheat flour, and box or bottle up tight. In applying this, the place should be well cleansed with soap-suds, (castile soap is best) then tallow should be applied all around outside to prevent the hair from being removed by the paste dissolving and running over it. Now this paste must be pressed to the bottom of all the orifices ; if very deep it must be made sufficiently thin to inject it by means of a small syringe, and repeated once in two days, until all the callous pipes, and

hard fibrous base around the poll evil, or fistula, is completely destroyed. Sometimes one application has cured cases of this kind, but it will generally require two or three. If the horse cannot be kept up, you will put a piece of oiled cloth over the place. The advantage of this caustic over all others is, that less pain and inflammation is induced.

The sores may be cured by the following or Sloan's ointment: cedar oil is to be applied to the tendons, to prevent them stiffening, in pole evil, or other cases.

334. DEGRAY, OR SLOAN'S HORSE OINTMENT.

Take of rosin 4oz., lard 8oz., honey 2oz., mix and melt slowly, gently bring to a boil, and as it begins to boil slowly, add a little less than a pint of spirits of turpentine, stirring all the time it is being added, then remove from the stove, and stir till cool. This is an extraordinary ointment for bruises in flesh or hoof, broken knees, galled backs, bites, cracked heels, &c., or when a horse is gelded, to heal and keep away flies.

335. NERVE AND BONE LINIMENT.

Take of beef's gall 1 quart, alcohol 1 pint,

volatile liniment 1lb., spirits of turpentine 1lb., oil of origanum 4oz., aqua ammonia 4oz., tincture of cayenne $\frac{1}{2}$ pint, oil of amber 3oz., tincture of spanish fly 6oz., mix and shake well. Uses too well known to need description.

336. TO CURE FOUNDERS IN 24 HOURS.

Boil or steam stout oat straw for half an hour, then wrap it round the horse's legs while quite hot, cover up with wet woollen rags to keep in the steam: in six hours renew the application. Take 1 gallon of blood from the neck vein, and give a quart of linseed oil. He may be worked next day.

337. TO CURE COLIC IN TEN MINUTES.

Bleed freely at the horse's mouth, and take 1oz. of oil of juniper, 1oz. of laudanum, and 2ozs. of sweet spirits of nitre. Mix in a pint of gruel, and drench him with it.

338. GARGLING OIL.

Take of tanner's oil 1 quart, oil of vitriol 2oz., spirits of turpentine 1oz. Mix all together, leave

the bottles open till it stops working, then it is ready for use.

339. MERCHANT'S GARGLING OIL.

Take of linseed oil $2\frac{1}{2}$ galls., spirits of turpentine $2\frac{1}{2}$ galls., western petroleum 1 gall., liquor potass 8oz., sap green 1 oz., mix all together, and it is ready for use.

340. PURGING BALLS.

Take of aloes, 3oz. ; anise seed, 3oz. ; pulverise and mix with castile soap. This makes one ball for a horse.

341. URINE BALLS.

Take of white resin, $\frac{1}{2}$ lb. ; castile soap, $\frac{1}{2}$ lb. ; venice turpentine, $\frac{1}{2}$ pint ; mix well together ; make the balls the size of butternuts. Give the horse three the first day, two the second day, and one the third day.

342. FOR THE HEAVES.

Give the horse $\frac{1}{2}$ drachm of nitric acid, in a pint

of sweet milk. Repeat once in two days, once in three days, and once in four days. This receipt is highly prized, and is good ; but the best remedy for heaves is so simple that scarcely any one will try it ; it is to take fresh sumack tops, break two or three bunches of them up in the horse's feed, three times a day. This will actually cure the heaves unless, they are very bad.

343. INFLAMMATION OF THE LUNGS.

The symptoms of inflammation of the lungs in the horse is as follows :—it is usually ushered in by a shivering fit, the horse is cold all over, reaction soon takes place, the body becomes warmer, and the extremities extremely cold. The breathing is quick, he refuses to lie down. If when wearied out, he lies down, it is but for a moment.

Treatment.—This may be commenced by a good bleeding, which is to be followed by a drachm of emetic tartar, and three drachms of nitre, every eight hours, rubbing the extremities, and giving bran-mashes ; throw warm blankets over the animal, hanging down to the floor, and place vessels of hot water in which put hot stones or bricks, and sweat freely, also, give one scruple of opium, and

two of calomel, twice a day. The sides of the chest may be thoroughly blistered. This is the proper treatment.

344. STOMACH AND BOWELS.

Inflammation of the stomach and bowels in the horse, resembles colic in its symptoms, except in colic the pains pass off at times, and return again, whereas in inflammation, the pain is constant, and the animal is never easy; after a time the eye acquires a wild, haggard, unnatural stare, and the pupil, or dark spot in the eye, dilates.

Treatment.—Take away, at once, six or eight quarts of blood, and repeat the bleeding if the pain returns. Follow the bleeding by one scruple of opium, and two of calomel, twice a day; also blister the sides of the chest; give him bran mash and purging balls, (Receipt No. 340.)

345. INFLAMMATION OF THE KIDNEYS.

The principal symptoms of inflammation of the kidneys in the horse, is, pressure on the loins elicit symptoms of pain, the breathing is hurried, there is a constant desire to void urine, although

passed in small quantities, highly coloured, and sometimes tinged with blood. Treatment:—this is blood-letting, active purging, mustard poultices as near the kidneys as possible, and the horse warmly clothed, &c., as in other inflammations.

346. CONDITION POWDERS.

Take of flax-seed meal 2lbs., finygreek meal 2 lbs., liver antimony $\frac{1}{2}$ lb., and nitre $\frac{1}{2}$ lb., mix well; give a tablespoonful for three days and omit three days, &c.

347. FOR BONE SPAVIN.

Take of cantharides 2oz. ; strong mercurial ointment 4oz. ; oil of turpentine 4oz. ; iodine 3oz. ; mix all with a sufficiency of lard to make a thin ointment; apply to the spavin only once a-day until it bursts; then oil it with sweet oil until healed. If the bunch is not then removed, apply it again, and again if necessary, which is seldom the case.

348. TO MAKE A HORSE FOLLOW YOU.

The horse is treated in the same manner as men-

tioned in the receipt No. 305, always being careful to whip him on the hips. When he will follow you round the barn floor, then treat him in the same manner in a yard, and when he follows you here, he will any place.

349. COLTS CHEWING HALTERS.

Take scab from the wart on the inside of the leg, rub the halter thoroughly with it, and they will not be found chewing their halters very soon.

350. HORSES JUMPING FENCES.

Pass a small and strong cord around his body just behind his shoulders, and tie the halter to this cord between his forelegs, so as to leave the distance about two feet from the cord to his head; if then he attempts to jump, he is compelled to throw his head forward, which draws hard on the cord, and causes it to cut into his back, and he instantly desists. The cord should not be more than a quarter of an inch in diameter.

350. BLAZE OR STAR.

When we have a pair of horses that match well

in every respect, except that one has a blaze or star in the face, it becomes very interesting and important to know how to make their faces match. Take a piece of oznaburgs the size you want the blaze or star; spread it with warm pitch and apply it to the horses face; let it remain two or three days, by which time it will bring off the hair clean, and make the part a little tender; then take of elixor vitriol a small quantity, anoint the part two or three times; or, take of a very common weed called asmart, a small handful, bruise it, and add to it about a gill of water, use it as a wash until the face gets well, when the hair will grow out entirely white.

351. BLACK SPOTS.

To spot a white horse with black spots, take litharge 3 ozs.; quick lime, 6 ozs.; beat fine and mix together; put it into a pan, and pour a sharp ley over it; then boil it and you will have a fat substance swim on top, with which anoint the horse in such places as you design to have black, and it will turn to the colour immediately.

352. INFLUENZA OR HORSE-AIL.

The first symptom is debility. The horse ap-

pears dumpish, refuses to eat, mouth hot, in six or twelve hours the appetite diminishes, legs and eyelids swell. This disease may end in chronic cough, a bad discharge from the nose, and in inveterate cases in glanders.

Treatment.—Keep the horse on light food, as mashes, scalded shorts, green grass, &c., and if he is very plethoric he should be half starved and bled from the mouth. If the throat is sore, rub it with warm vinegar and salt, or blister; walk him a little for exercise, administer the following: oil of croton, 5 drops; nitrate of potassa, 4 to 6 drachms; potassio-tartrate of antimony, 1 drachm; spirit of nitric ether, 4 drachms to 1 oz; solution of acetate of ammonia 2 to 4 ozs.; and warm water sufficient to make a draught; and when the head is much affected, add a drachm of camphor. This draught may be administered once and sometimes twice a day, the croton oil being omitted after the first dose; after the first day, 2 drachms of powdered gentian may be added.

353. STRANGLES OR HORSE DISTEMPER.

Symptoms.—A discharge from the nostrils, with a swelling under the throat, a disinclination to eat.

Thirst, but after a gulp or two the horse ceases to drink. In attempting to swallow, a convulsive cough comes on; mouth hot and tongue coated with a white fur. The tumor under the jaw soon fills the whole space, and is evidently one uniform body, and may thus be distinguished from glanders or the enlarged glands of catarrh.

Treatment.—Blister over the tumor at once; when the glands remain hard and do not suppurate, it may lead to glanders, in which case rub it with iodine ointment, and give internally, hydriodate of potash in daily doses of 10 to 40 grains, combined with gentian and ginger. As soon as the swelling is fit, lance it freely and apply a linseed poultice; give bran mashes, fresh grass, &c.

354. STAGGERS.

Symptoms, giddiness, he may fall down, or suddenly turn several times round first; he may be quiet, or struggle violently.

Treatment.—If the horse be full and well fed, take 3 or 4 quarts of blood at once; cease using him for a time, and give him an occasional physic ball of powdered aloes 6 drachms and a little honey.

355. GREEN OINTMENT.

Take of lard, 6 lbs., put into a ten gallon kettle; add 2 gallons of water; cut jimpsón seeds and fill them in, and cook from 4 to 6 hours slowly, till all the water is gone; then put into jars, and add to each pound of ointment one ounce of turpentine. Good for galls, cuts, scratches, &c.

356. HOOF EVIL OR THRUSH GREASE
HEELS.

Bleed and physic, and poultice the feet with boiled turnips and some finely ground charcoal at night, for two or three nights; then wash the feet clean with castile soap and soft water, and apply the blue ointment every day; keep the horse on a floor and he will be well in 12 days.

357. BLUE OINTMENT.

Take the ointment of rosin, 4 ozs; finely ground verdigris, $\frac{1}{2}$ oz; turpentine, 2 ozs; mutton tallow, 2 lbs; oil of origanum, $\frac{1}{2}$ oz; tincture of iodine, $\frac{1}{2}$ oz. Mix all together. This is one of the best medicines that can be made for scratches,

hoof-evil, and cuts, and is good to apply on fistula after the rowels have been taken out. It is as good for human as horse flesh.

358. HOOF BOUND OR TENDER FEET.

Never have the feet spread at the heels, nor rasped about the nail holes; use the hoof liquid, and apply it according to directions. For hoof bound or tender feet, apply it all around the top of the hoof down one inch every day. First have a stiff shoe on the foot, and cleanse the cut or cork. Never cut or burn for it.

359. HOOF LIQUID.

Take of linseed or neatsfoot oil, $\frac{1}{2}$ a pint; turpentine, 4 ozs; oil of tar, 6 ozs.; organum, 3 ozs; mix and shake well together.

360. HOOF ALE.

Apply blue vitriol, and put on a tarred rag to keep out the dirt.

361. BIG, OR MILK LEG.

Apply the liquid blister every three hours until

it blisters; then in six hours grease with soft oil of any kind; then in eight days wash the part clean, and apply it again. Repeat it three or four times, then use the iodine ointment. If this does not remove it all, apply the ringbone and spavin medicine, this will remove it all.

362. IODINE OINTMENT.

Get 1oz. of the grease iodine, put in 1 pint of alcohol; let this stand in the sun two days, and you have the tincture of iodine. Take 2oz. of the tincture and $\frac{1}{2}$ lb. of lard; mix well, and you have the iodine ointment.

363. SPRAIN IN THE STIFLE.

Symptoms.—The horse holds up his foot, moans when moved, swells in the stifle. This is what is called stifling; there is no such thing as this joint getting out of place. Cure.—Bleed two gallons, foment the stifle with hot water, rub it dry, then bathe it well with the general liniment every morning and night, give him mash, and he will soon be well. Never allow any stifle-shoe or cord on the foot or leg.

364. GENERAL LINIMENT.

Take of turpentine, $\frac{1}{2}$ pint ; linseed oil, $\frac{1}{2}$ pint ; aqua-ammonia, 4oz. ; tincture of iodine, 1oz. ; shake all well together. This is used for different things spoken of in the different receipts, sores or swellings, sprains, &c.

365. LIQUID BLISTER.

Take of alcohol, 1 pint ; turpentine, $\frac{1}{2}$ pint ; aqua-ammonia, 4oz. ; oil of origanum, 1oz. ; mix, apply this as spoken of, every three hours until it blisters.

366. TO CURE CORNS.

Take off the shoe, cut out the corns, and drop in a few drops of muriatic acid, then make the shoes so they will not bear on the part affected. Apply the hoof liquid to the hoof to remove the fever. This is a sure cure for corns in horses.

367. WATER FARCY, OR DROPSY.

This is a swelling along under the chest, and

forward to the breast; bleed, rowel in the breast and all along the swelling, six inches apart, apply the general liniment to the swelling, move the rowels every day, let them stay in until the swelling goes down. Give soft food, mashes, with the cleansing powder in them.

368. CLEANSING POWDER.

This is to be used when the blood is out of order. It is good to restore lost appetite, good for yellow water, whenever it is to be used it is spoken of in the receipts. Take of good ginger 1lb., powdered gentian 4oz., nitre 1oz., crude antimony $\frac{1}{2}$ oz., mix well together. Give one large spoonful every day in wet food. This is perfectly safe.

369. POLL EVIL.

Cure before it breaks, run a rowel or seaton from the lower part of the swelling to the top through the centre of the enlargement, then make the following lotion. Take of sal-ammoniac 2 oz., spirits of turpentine $\frac{1}{2}$ a pint, linseed oil 4oz., and spirits of tar 4oz., shake all well, and apply it all over the swelling every other day. Let the seaton stay

in until all the swelling is gone down, move it every day, and when all is gone throw it out. Bleed when you first open it, and keep the part clean.

370. GLANDERS.

Bleed copiously, put a rowel or seaton of polk root between the jaw and breast, put tar thoroughly up the nostrils twice a day. This is the best remedy ever in use.

371. FRESH WOUNDS.

If there is an artery cut, tie it if possible ; if not possible, or if there is much bleeding without the separation of an artery, apply the following wash : nitrate of silver 4 grains, soft water 1oz., wet the wound with this, and then draw the edges together by stitches one inch apart, then wash clean, and if any swelling in twenty-four hours, bleed and apply the blue ointment, or any of the liniments spoken of. Keep the bowels open.

372. THE LIVER.

In disease of the liver or yellow water, give the

following ball every morning until it operates upon the bowels. Take of aloes 7 drachms, calomel 1 drachm, ginger 4 drachms, and molasses enough to make it into a ball, wrap it in a paper and give it; give scalded bran and oats, grass if it can be got; when his bowels have moved, stop the physic, and give 1oz. spirits of camphor in half a pint of water, every morning, for twelve days, rowel in the brest, and give a few doses of cleansing powder. Turn him out.

373. BALLS FOR WORMS IN HORSES.

Take of barbadose aloes 6 drachms, powdered ginger $1\frac{1}{2}$ oz., oil of wormwood 20 drops, powdered natron 2 drachms, and molasses to form a ball.

374. BALLS FOR HIDE BOUND.

Take of barbadose aloes 1oz., castile soap 9 drachms, and ginger 6 drachms. Make into a ball.

375. HEALING OINTMENT.

Take of lard 5 parts, rosin 1 part, melt them together; when they begin to get cool add two

parts of calamine powder, stirring well till cool. If the wound is unhealthy add a little turpentine.

376. GALLS ON HORSES.

Bathe the parts affected with spirits saturated with alum.

377. GRUBS IN HORSES.

Take of red precipitate a teaspoonful, form into a ball, repeat if necessary in 30 minutes.

378. STIFF SHOULDERS OR SWEENEY.

Rowel from the top of the shoulder blade down as far as there is no peeling. First cut through the skin, and then two thin fibres or strippings, use the blunt needle, move it back and forwards five or six inches, draw in a tape or seaton, and the next morning wet it with tincture of cantharides, do this every other day, move them every day, wash the part clean, let the tape stay in until the matter changes to blood, this is for both diseases. Let him run out if possible. He will be well in six or eight weeks. If for sweeney you may work him all the time.

379. SICK STOMACH IN HORSES.

Bleed half a gallon, then if he will eat a mash give him one, give no hay, then give him $\frac{1}{2}$ oz. of rhubarb every night until it moves his bowels, then take of gentian root 4oz., fenu-greek 2oz., nitre $\frac{1}{2}$ oz., mix and give a large spoonful every day. Do not give him too much to eat when his appetite returns.

380. LUNG FEVER.

Bleed four gallons from the neck vein, and take 1oz. of aquanite, add to it half a gallon of cold water, drench him with a gill of it every three hours, blister him over the lungs, then give him water to drink that hay has been boiled in, and to each gallon of it add 1oz. of gum-arabic, and $\frac{1}{2}$ oz. of spirits of nitre; give this every four hours; foment and rub the legs with alcohol and camphor, until they get warm; do not move the horse. Keep him in open stall if hot weather.

381. EYE WASH FOR HORSES.

Take of sugar of lead, 2 drachms; white vitriol,

1 drachm; and soft water, 1 quart; mix and dissolve; wash the eyes out well every morning, having first washed them well with cold water, continue this for three or four weeks; and then, if the eyes are not much better, bleed and give a mild physic. The horse should be kept on low diet, and not over heated or worked too hard. Scalded shorts or oats are good.

382. MANGE AND SURFEIT.

Bleed and physic, then take sulphur, $\frac{1}{2}$ lb.; and lard, 2 lbs.; mix well; grease the part affected every three or four days; stand the horse in the sun until all dries in; give him a few doses of the cleansing powder.

383. CONTRACTION OF THE NECK.

If it is taken in the first stages, bleed from the neck, 2 galls.; then ferment or bathe the part well with hot water; rub it dry, and apply the general lineament every day, two or three times; this will cure if it is of long standing. Then blister all along the part affected with the liquid blister. Do this every three weeks until he is

well, and rub with the white ointment. Do not work the horse till well.

384. WHITE OINTMENT.

For rheumatism, sprains, burns, swellings, bruises, or any inflammation on man or beast, chapped hands or lips, black eyes, or any kind of bruises. Take of fresh butter, 2lbs.; tincture of iodine, $\frac{1}{2}$ oz.; oil of origanum, 2ozs.; mix well for fifteen minutes, and it is fit for use; apply it every night; rub it in well with your hand.

385. OLD HORSES YOUNG.

Drops to make old horses as lively as young. Take the tincture of assafoetida, 1oz.; tincture of cantharides, 1oz.; oil of cloves, 1oz.; oil of cinnamon, 1oz.; antimony, 2oz.; fenugreek, 1oz.; and fourth proof brandy, $\frac{1}{2}$ gal.; mix all and let stand ten or twelve days; then give ten drops in a pail, or one gallon, of water.

386. RHEUMATIC LINEAMENT.

Take of alcohol, $\frac{1}{2}$ pint; oil of origanum, $\frac{1}{2}$ oz.;

cayenne pepper, $\frac{1}{2}$ oz. ; gum myrrh, $\frac{1}{2}$ oz. ; and lobelia, 1 teaspoonful ; mix and let stand one day ; then bathe the part affected.

387. TO KILL LICE ON CATTLE.

Take of buttermilk, 1 quart ; salt, $\frac{1}{3}$ pint ; mix and dissolve ; pour this along the back, letting it run down each side ; if this should ever fail use the water in which potatoes have been boiled, in the same way, it will be effectual.

388. HORSES FROM FIRE.

The difficulty of getting horses from burning stables is well known. The remedy is to blindfold them perfectly, and by gentle usage, they may be easily led out. If you like you may also throw the harness upon them.

389. SNOW BALLS.

To prevent snow balls on horses' feet clean their hoofs well, and rub with soft soap before going out in the snow.

390. ROT IN SHEEP.

To prevent and cure this keep them from

exposure in bad weather, and above all from wet pasture; pair their hoofs into the quick, and put them to stand occasionally in quick lime for a few hours. This cauterizes the disease and generally affects a cure. To destroy the flukes and worms, give the following: take of common salt 8oz., spirits of turpentine 2oz.; put in a quart bottle and add water till filled; give one teaspoonful morning and night for eight days.

391. DISTEMPER IN HOGS.

To cure this take equal parts of sulphur and copperas; pulverise them well together, and give one teaspoonful every three days in the slop.

392. CURE FOR SWELLED CATTLE.

If the beast affected is full grown, administer one English pint of train oil, and smaller doses in proportion to the age. The cure is certain. The above medicines from receipt No. 331 are for horses, cattle, &c.

393. A TURKISH PREPARATION FOR LADIES.

Take of best white wine vinegar 1 quart; of

best brazil wood $\frac{1}{2}$ lb. Infuse together for four days; then boil for half an hour, strain through a linen cloth, and place the liquid again over the fire. Having now dissolved $\frac{1}{4}$ lb. of alum in a pint of white wine vinegar, mix both liquids together and stir them well. Take the scum that arises on the surface, gradually dry and powder it, and it is ready for use.

394. MINCE PIE.

This is the manner in which mince pie was prepared for the Prince of Wales in New York. The articles of the three following receipts were also prepared for him in that city: take of moist sugar 1lb, currants 1lb., suet well mashed 1 lb., apples cut very fine 1lb., best raisins, stoned and cut very small $\frac{1}{4}$ lb., the juice of five Seville oranges, the juice of two lemons, the rind of on mashed fine, a glass of brandy, and mace and nutmeg to suit your taste. Put all together in a pan and tie up closely.

395 HONEY CAKE.

Take of loaf sugar $\frac{1}{2}$ lb., honey $\frac{3}{4}$ lb., of orange-

peel cut very fine $\frac{1}{2}$ oz., of cinnamon $\frac{1}{2}$ oz., ginger $\frac{1}{2}$ oz., one quarter of a citron, four eggs well beaten, and a pound of sifted flour. First melt the honey and sugar together, then mix all. Make it into any shape you please.

396. SODA BISCUITS.

Take of butter 2oz., sugar 4oz., cream tarter $\frac{1}{4}$ oz., two eggs; one teaspoonful of soda, and a half pint of sweet milk. Stir quite stiff, &c.

397. BEEF STAKE.

Put two large onions, peeled and sliced, into a stew-pan, put in a little water, cover closely, set on a slow fire until the water is all gone, then add $\frac{1}{2}$ a pint of good broth, and boil till the onions are tender, now strain off the broth, chop the onions fine, and season to your taste with mushroom cat-sup, salt and pepper, let it boil for five minutes, with the onion in it, then pour it into the dish, and lay a broiled stake over it. Good beef gravy is far superior to broth. In broiling your stake use a strong fire.

398. WEDDING CAKE.

Take of flour, 18lbs. ; fine sugar, 10lbs. ; butter, 9lbs. ; 11 nutmegs ; 18 eggs ; milk, 5 quarts ; yeast, 1 quart ; fruit, 10lbs. ; mace, 1oz. ; wine, 1 quart ; and brandy, 1 pint. Roll the butter and sugar together, then mix all the rest with them, putting the fruit in last, just before it is put in the oven.

399. DOMESTIC YEAST.

Take of good flour, 1lb. ; brown sugar, $\frac{1}{4}$ lb. ; water, 2 galls. ; and a little salt. Boil all together for one hour. When milk warm, bottle and cork it tightly. It will be fit for use in 24 hours. One pint of this is sufficient for 18lbs. of bread.

400. TO PRODUCE MUSHROOMS.

If the water wherein mushrooms have been steeped be poured upon an old bed, or if the broken parts of mushrooms be strewed thereon, there will speedily arise great numbers.

401. TO MAKE CIDER INTO WINE.

Take of good cider, 25 galls. ; brandy, 1 gall. ;

crude tartar, 1 lb. ; of the wine you wish to resemble, 5 galls. ; of milk to settle it, 1 pint. Mix all together, and let it stand for 24 hours, and then draw off, being careful not to draw any of the sediment.

402. SUBSTITUTE FOR CREAM.

Take two or three whole eggs, beat them well up in a basin ; then pour boiling hot tea over them ; pour it gradually to prevent curdling. It is difficult from the taste to distinguish it from rich cream.

403. TO PRESERVE FRESH MEATS.

Meat may be kept several days in the height of summer sweet and good by lightly covering it with bran, and hanging it in some high, or windy room, or in a passage where there is a current of air.

404. GRAFTING WAX.

Take of tallow one part, beeswax two parts, and resin four parts ; melt them together and dip

strips of rags in the mixture while hot, and use them for grafting purposes.

405. FOR THE TEETH.

Cuvileer's grand preparation for beautifying the teeth. Take of chloride of lime one part, prepared chalk 15 parts, pulverised peruvian bark $\frac{1}{2}$ a part, and a little otto of roses; mix all well together and it is ready for use.

406. TO MAKE HAIR CURL.

Take of common soap 2lbs., spirits of wine 3 pints, and potash 3 oz.; cut the soap small and melt all together, stirring it with a clean piece of wood; then add a quarter of an ounce each of essence of amber, vanilla and nevoli, to render the fluid agreeable. Never use curling irons, for they destroy the hair, rendering it crisp and harsh. The above may be depended on as being genuine and harmless.

407. TO PRESERVE PORK.

Take 1lb. of black pepper and grind it fine for

one barrel of pork, and sprinkle on each layer until it is quite brown, then put on the salt. It helps to preserve the meat and adds greatly to the smell and flavour of it.

408. TO RESTORE TAINTED PORK.

In warm weather the brine on pork frequently becomes sour, and the pork tainted; pour off the brine, boil it, skim it well, then pour it back again upon the meat boiling hot. This will restore it even where it was much injured.

409. FIRE-PROOF CEMENT.

Fire and water proof cement for roofs of houses. Slack stone lime with boiling water in a covered barrel; when slacked pass six quarts through a fine sieve; to this add one quart of rock salt, and a gallon of water, boil the mixture and skim it clean; to every 5 gallons of this add 1lb. of alum, and $\frac{1}{2}$ lb. copperas, and add by degrees, potash $\frac{3}{4}$ lb., and fine sand or wood ashes sifted 4 quarts; colour to suit your taste and apply. It will be as durable as stone.

410. BUG POISON.

Take of spirits of wine $\frac{1}{2}$ pint, turpentine $\frac{1}{2}$ pint, crude sal-ammoniac 1oz., corrosive sublimate 1oz., and gum camphor 1oz; mix all together and let it saturate for seven days, and it is ready for use.

411. DISINFECTING AGENT.

Take of green vitriol 3lbs., hot water one pailful; dissolve the vitriol in the water; place this wherever there is any offensive odours, as that of a corpse, cesspools, privies, &c., and in a short time all smell will be removed. Try it.

412. BOOTH'S PATENT.

Booth's patent grease for railway axles, wagons, machinery, &c. Take of water 1 gallon, clean tallow 3lbs., palm oil 6lbs., and common soda $\frac{1}{2}$ lb.; or tallow 8lbs., and palm oil 10lbs. The mixture is to be heated to about 210° F., and well stirred till it cools down to about 70°, when it is ready for use.

413. GUM-ARABIC STARCH.

Take 2oz. of fine white gum-arabic powdered

finely ; put it into a pitcher and pour on it a pint of boiling water ; then cover it and let stand all night ; in the morning pour it carefully from the dregs into a clean bottle ; cork and keep it for use. A tablespoonful of this gum water stirred into a pint of starch that has been made in the usual manner will give to launs either black, white, or printed, the appearance of new, to which nothing else can restore them after washing. It is a good article for collars and shirt bosoms ; also, when much diluted, for thin white muslin and bobbinet.

414. ROMAN OR MASTIC CEMENT.

Take of pulverised sand stone sifted fine, 20lbs., litharge 2lbs., mix both well with linseed oil to the consistency of paste ; brush both broken parts over ; press them snugly together, and let them dry, this forms an excellent cement.

415. PORTABLE BALLS.

For taking stains out of cloths, &c.—Dry fullers' earth so as to crumble it into powder, and moisten it well with lemon juice ; add a quantity of pure pulverised pearl-ash, and work the whole up into a

thick paste with a little water ; roll it into small balls ; let them completely dry in the sun, and they will be fit for use. The manner of using them is to moisten, with water, the spots on the cloth, rubbing the ball over, and leaving it to dry in the sun. On washing the spots in rain water they will immediately disappear.

416. CLOTH, RAIN PROOF, &c.

To render cloth wind and rain proof. Boil together 2lbs. of turpentine, 1lb. of litharge in powder, and 2 or 3 pints of linseed oil. The article is then to be brushed over with this varnish, and dried in the sun.

417. CHOICE CEMENT.

A choice cement for china, crockery, and glass. Take of white glue $\frac{1}{2}$ lb., dry white lead $\frac{1}{2}$ lb. alcohol $\frac{1}{4}$ pint, and rain water 1 quart ; put the glue, alcohol, and water into a tin pan together ; let stand until the glue is soft ; then set the pan into a kettle of hot water, occasionally stirring it until the glue is about dissolved ; then add the lead, being previously powdered, and stir until it is

about dissolved. Bottle while warm, and it is ready for use. If cold when about to be used, set the bottle in warm water until soft; then apply while soft to both edges, set together and let them dry.

418. MAHOGANY STAIN.

Take of chip logwood 1lb., sal-soda two pence worth, water 1 gallon, boil all together, apply it while hot, to every kind of white wood, using a brush or sponge, and it will produce a most beautiful mahogany colour.

419. MAHOGANY COLOUR.

Method of darkening every sort of wood. Take soap suds, wash your wood with it; every coat you put on will make it a shade darker.

420. SATIN WOOD STAIN.

Take of water 1 quart, fustic 2oz., and the size of a small nut of alum; boil all together, apply it while hot, and it will produce a most beautiful yellow. When the article to which this

has been applied has got perfectly dry, rub it over with lime water, and it will make a beautiful red.

421. RED STAIN.

Take of water 1 quart, brazil dust 2oz., and the size of a nut of alum ; boil together, apply while hot and the stain is red ; when dry, wash it over with lime water, and it will be a beautiful purple.

422. BROWN STAIN.

Take of water 1 quart, logwood 2oz., and one penny worth of soft soap, (such as is kept in bladders, by druggists), boil them together, apply while hot, and it will be brown ; let it dry, and apply lime water, and you will have a beautiful black.

423. SCARLET STAIN.

Take a solution of aqua-fortis in water, apply it to the black, and it will produce a beautiful scarlet.

424. BRUSH VARNISH.

Take of spirits of wine 1 pint, gum benzion half

a pound ; dissolve the gum in the spirits. It may be laid on with a camel hair brush, or a small piece of wool rolled in old cotten.

425. TO BORE GLASS.

Fill a vial with turpentine spirits, dissolve in it as much camphor as it will take, insert then into this liquid the point of a common diamond-pointed drill, and with it you can bore glass as fast as you please.

426. GERMAN SILVER.

Take of nickle 25 parts, zinc 25 parts, copper 50 parts, melt all together, and you have good German silver.

427. BRASS.

Brass is made by melting together a little less than two parts of copper, and one part of zinc.

428. CHEMICAL SOAP.

This is for washing cloths with one-half the

labour of that with common bar soap. Take 16lbs. English bar white soap, $3\frac{1}{2}$ lbs. sal-soda, 1lb. pulverized rosin, 8oz. salt; put these into 5 gallons soft water over a fire until dissolved; then put the same into a barrel, and fill it with cold soft water, after which add 2oz. spirits of turpentine, and stir while cooling.

429. ENGLISH BAR SOAP.

Take of water 6 gallons, good stone lime 3 lbs., sal-soda 20lbs., borax 4oz., fat 15lbs., (tallow is best,) pulverized rosin 10lbs., and 4oz. of beeswax; put the water in a kettle on the fire, and when nearly boiling, add the lime and sal-soda; when these are dissolved, add the borax, boil gently and stir until this is also dissolved, then add the fat, rosin and beeswax, and boil all very gently until it shows flaky on the stick, then pour into moulds.

430. BROWN WINDSOR SOAP.

This is made by colouring the English bar soap with the precipitate of iron, Venetian red, or vandyke brown, and scenting, while not too hot,

with any of the essential oils, or a mixture of them according to fancy.

431. YELLOW SOAP.

This is made in the same way as the English bar soap, except that you add three per cent. of palm oil, deducting the same amount of fat.

432. SOLID LARD CANDLES.

Dissolve $\frac{1}{4}$ lb. of alum, and $\frac{1}{4}$ lb. of saltpetre in $\frac{1}{2}$ a pint of water on a slow fire; then take 3lbs. of lard cut into small pieces, and put into the pot with this solution, stirring it constantly over a very moderate fire until the lard is all dissolved; then let it simmer until all steam ceases to rise, and then at once remove it from the fire. If you leave it too long it will become discoloured. These candles are harder and better than tallow.

433. MEDICINES.

The following medicines are for man, while those commencing at receipt No. 331, and ending at No

392 are for horses, cattle, &c., unless when stated to the contrary :

434. FOR DROPSY.

Take of powdered jalap 5 gr., powdered rhubarb 5 gr., powdered scammony 5 gr., powdered elaterium $\frac{1}{2}$ gr., bitartrate of potash $\frac{1}{2}$ drm., sulphate of potash, $\frac{1}{2}$ drm., and syrup of ginger sufficient to make into pills ; mix and divide into five pills. These five pills given at once form an excellent hydragogue cathartic to clear the chest, relieve breathing, and diminish the dropsical effusion.

435. ANTIBILIOUS PILLS.

Take of calomel 20 grs., jalap powder 20 grs., tartar-emetic 2 grs., and syrum sufficient to form into pills ; divide into eight pills. The dose is two at bed time ; repeated in the morning if necessary. This forms an excellent antibilious pill.

436. JAUNDICE.

Take of rhubarb powder 1 scruple, castile soap

half a drachm, calomel 12 grs., mix and divide into pills; two or three to be taken at bed-time; emetics, purges, fomentations about the stomach and liver, and exercise will seldom fail to cure jaundice when it is a simple disease; and when complicated with dropsy, a scirrous liver, or other chronic complaints, it is hardly to be cured by any means. Castile soap has been looked upon as a kind of specific.

437. ASTHMA.

Take of powdered squills 2 drms., powdered assafoetida 1 drachm, mix and divide into 30 pills, two to be taken twice or thrice a-day. Useful in chronic asthma.

438. DR. DEWEES' ANTI-COLIC MIXTURE.

Take of carbonate of magnesia $\frac{1}{2}$ drm., tincture of assafoetida 60 drops, tincture of opium 20 drops, white sugar 1 drm., and distilled water 1oz.; mix and shake; twenty-five drops to be given to an infant of two to four weeks old, in flatulent colic, diarrhoea, &c.

439. DR. HUN'S ANTI-DIARRHŒAL MIXTURE.

Take of oil of cajeput 1oz., oil of cloves 1oz., oil of peppermint 1oz., oil of anise 1oz., alcohol 4oz.; mix and shake; dose, from one to two drachms in hot brandy and water or syrup. This will afford the most speedy relief in diarrhœa accompanied with pain.

440. HOPE'S MIXTURE.

Take of camphor water 4oz., nitric acid 4 drops, tinc. of opium 40 to 60 drops; mix, cork, and shake; dose, a tablespoonful every two hours in diarrhœa and dysentery.

441. ANTI-CHOLERA MIXTURE.

Take of tinc. of opium 1 drm., liquor ammonia $\frac{1}{2}$ drm., tinc. of the oil of peppermint $\frac{1}{2}$ drm., ether 25 drops, tinc. of camphor 1 drm, tinc. of capsicum, 1 drachm; mix, cork, and shake. In real cholera give this all immediately; if the patient throws it up, repeat at once. This is an excellent prescription in extreme cases when the patient is cramped.

442. FOR HYSTERIC FITS.

Take of tinc. assafoetida 2 drms., aromatic spirits of ammonia 2 drms., camphor water 7ozs., mix and cork; give two tablespoonsful every three or four hours.

443. ANTI-ASTHMATIC MIXTURE.

Take of mixture of ammoniacum 4oz., syrup of squill 3 drms., antimonial wine 60 drops, wine $\frac{1}{2}$ oz., mix and cork. Give two tablespoonsful often, or when either the cough or shortness of breath is troublesome.

444. ANTI-RHEUMATIC MIXTURE.

Take of ammoniated tinc. of guack $\frac{1}{2}$ oz., honey $\frac{1}{2}$ oz., camphor water 6oz., mix and cork. Take two tablespoonsful three or four times a-day in chronic rheumatism; rub well the affected part with anti-rheumatic liniment.

445. ANTI-RHEUMATIC LINIMENT.

Take of tinc. of opium 2oz., tinc of belladonna

2oz., powdered camphor 2oz., water of ammonia 2oz., oil of turpentine 2oz., oil of sassafras 2oz., oil of organum 2oz., and tinc. of capsicum 1 pint; mix all together.

446. DIURETIC MIXTURE.

Take of peppermint water 5oz., wine 6 drachms, sweet spirits of nitre $\frac{1}{2}$ oz., syrup of ginger $1\frac{1}{2}$ oz.; mix. Two table-spoonsful to be taken three times a-day in obstruction of urinary passages.

447. SWEATING MIXTURE.

Take of acetated liquor of ammonia 3oz., ipecacuanha 10 gr., tincture of oil of peppermint 15 drops, distilled water 5oz.; mix. Three table-spoonsful to be taken every two hours, until it produces the desired effects.

448. FOR CRAMP IN THE STOMACH.

Take of ether 2 drms, white sugar $1\frac{1}{2}$ drms, powdered acacia $1\frac{1}{2}$ drms., tinc. of opium 60 drops, cinnamon water 2ozs.; mix. Give a teaspoonful every hour in cramp of the stomach.

449. FOR HOOPING COUGH.

Take of tinc. of assafoetida 1 drm, ipecacuanha 10 gr., tinc. of opium 10 drops, distilled water 2ozs. ; mix. Give to a child two years old a teaspoonful every four hours, increasing ten drops for every additional year.

550. FOR WINTER COUGH, &c.

Take of powered extract of liquorice 2 drms, gum acacia 2 drms, hot water 4oz. ; mix. Let all dissolve, and add tinc. of opium 40 drops, spirits of nitric ether 1 drm., wine of antimony 2 drms. Dose, one tablespoonful in catarrh and common winter cough.

451. TONIC MIXTURE.

Take of calomba 2 ozs., tinc. of muriate of iron $1\frac{1}{2}$ oz., sulphate of quinine 20 grs., brandy 6 ozs., water $1\frac{1}{2}$ pint, bruise the calumba and pour the water on it boiling hot, cover tightly for two hours, then strain, bottle, and add all the other ingredients, when the quinine is dissolved it is ready for use. This forms an excellent tonic in cases of

debility. Dose, one tablespoonful three times a-day half an hour before meals.

452. ANTI-PERIODIC MIXTURE.

Take of sulphate of quinine 20 grs., sulphuric acid 1 drop, white sugar 1 drm., cinnamon water 2½oz. ; put the quinine, acid, and water into a vial together, when dissolved add the sugar. Dose, a teaspoonful every hour, between the paroxysms of intermittent fevers, fever and ague, &c.

453. EMMENAGOGUE MIXTURE.

Take of tinc. of aloes ½oz., tinc. of chloride of iron ½ drm., tinc. of valerian ½oz. ; mix. Take a teaspoonful in chamomile tea two or three times a-day in cases of amenorrhœa.

454. ANTI-GOUT MIXTURE.

Take of ammoniated tinc. of guaiac 6 drms., camphor water 6ozs., tinc. of rhubarb ½oz., and honey ½oz. ; mix, by rubbing the honey and the guaiac up in a glass mortar, and then add the other articles by degrees. Give two tablepoonsful every

four or six hours, and rub with the anti-rheumatic liniment.

455. ANTI-GONORRHŒAL MIXTURE.

Take of copaibe $\frac{1}{2}$ oz., spirits of nitric ether $\frac{1}{2}$ oz., powdered acacia 1 drm., powdered white sugar 1 drm., compound spts. of lavender 2 drms., tinc. of opium 1 drm., distilled water 4oz. ; mix. Dose, a tablespoonful three times a-day. Shake before using.

456. ANOTHER.

Take of copaibe 1oz., sweet spirits of nitre 1oz., gum acacia powdered 2 drms., powdered white sugar 1 drm., peppermint water 4oz. ; mix, and let all dissolve. Dose, a tablespoonful three times a-day. Shake before using.

457. ASTRINGENT EYE-WATER.

Take of solution of acetate of lead 12 drops, wine of opium 11 drops, rose water 4ozs. ; mix, and let dissolve. This should be applied with a linen rag four or five times a-day.

458. EYE-WATER.

Take of distilled vinegar 1oz., diluted spirits of wine $\frac{1}{2}$ oz., rose water 8ozs.; mix. An excellent application to weak eyes after depletion.

459. ALUM EYE-WATER.

Take of rose-water 2ozs., distilled water 2oz., and alum 1 scruple; mix, and let dissolve. Excellent in chronic inflammations.

460. GARGLE OF BORAX, &c.

Take of borax 1 drm., tinc. of myrrh $\frac{1}{2}$ oz., clarified honey 1 oz., rose or distilled water, 4ozs.; mix. To be used as a gargle or mouth-wash in sore mouth or affections of the gums. Omit the myrrh and water, and there is nothing better for the thrush in children; clean rain water answers about the same purpose, in all cases, as distilled water.

461. GARGLE FOR SORE THROAT.

Take of sulphate of quinine 15 grains, sulphate

of copper 16 grains, aromatic sulphuric acid 1 dram., water 8ozs.; mix and dissolve. To be used frequently in chronic and obstinate sore throats.

462. OINTMENT FOR PILES.

Take of lard 1 oz., solution of subacetate of lead 25 drops, tinc. of opium 1 dram.; mix well. Anoint the parts twice a-day.

463. OINTMENT FOR ITCH.

Take of sublimed sulphur 2 ozs., lard 4 ozs., oil of lavender 1 dram. Make into an ointment. To be rubbed on the parts affected every night, till the eruption disappears. The internal use of sulphur will, in all cases, assist its external application.

464. BLISTERING OINTMENT.

Take of lard 32 parts, oil of almonds 2 parts, strong liquor of ammonia 17 parts; melt the lard, add the oil, then the ammonia, which must be strong, and keep the contents of the bottle well

mixed by shaking them until cold. This will blister in half an hour.

465. IODINE OINTMENT.

Take of iodine 3 grs., lard 2 drms.; make into an ointment; applied to scrofulous swellings when the skin is unbroken. It is the only cure for what is popularly termed thick neck.

466. OINTMENT OF IODIDE OF ZINC.

Take of iodide of zinc 1 drm., lard 1oz.; make into an ointment. A drm. to be rubbed on twice a-day in tumors.

467. OINTMENT FOR CHILBLAINS.

Take of lard $7\frac{1}{2}$ drms., creosote 10 drops, solution of subacetate of lead 10 drops; watery extract of opium 1 grain; mix. Apply to the affected parts.

468. OINTMENT FOR DISEASES OF THE SKIN.

Take of citrine ointment $1\frac{1}{2}$ drm., sublimed

sulphur 1 drn., lard 3 ozs. ; make an ointment. This is a good application for almost all affections of the skin.

469. EMOLLIENT OINTMENT.

Take of palm oil 2lbs., olive oil 1 pint, turpentine 4oz., red beeswax 6ozs. ; melt the wax in the oils, and then add the turpentine and strain the ointment. This is a most excellent application for inflamed parts, &c.

470. POKE ROOT OINTMENT.

Take of poke root 3ozs., lard 1 lb., boil for a quarter of an hour and strain. This ointment has quite a reputation in Virginia, with the old ladies, for all kinds of old sores and ulcers, and it is an excellent application to indolent and purulent ulcers and sores.

471. OINTMENT FOR HYDROCEPHALUS.

Take of iodide of mercury 2 parts, iodide of potassium 3 parts, camphor 2 parts, lard 32 parts ; mix and keep well corked. To be rubbed on the

head in hydrocephalus or water on the brain in doses of half a drachm to a drachm.

472. LINAMENT FOR BURNS.

Take of olive oil 1oz., linseed oil 1oz., lime water 1oz.; mix well. This forms an excellent application for recent scalds and burns.

473. VOLATILE LINAMENT.

Take of olive oil 1oz., aqua ammonia 1oz.; mix. To be applied to bruises, rheumatic parts, &c., and to the neck in inflammation of the throat.

474. ALKALINE CATAPLASM.

Take of lye, rather weak, warm it and stir in of slippery-elm bark or flaxseed, or meal sufficient to form a poultice.

This is a most excellent poultice, and should be used more than it is. It is useful in inflammation of the breast and other parts, felons, wounds, fistula, &c.

475. ANODYNE FOMENTATION.

Take of laudanum 4ozs., water 1 pint; mix.

For painful affections of the joints, as chronic rheumatism, &c., hops dipped in hot vinegar will answer as well.

476. COMMON CLYSTER.

Take of flaxseed tea or cornmeal gruel, from one to two pints, sweet oil 2 or 3 ounces, common salt one teaspoonful, brown sugar two table-spoonsful; mix.

477. ANODYNE CLYSTER.

Take of a solution of starch in water, of jelly, or water half a pint, laudanum forty drops; mix. The whole to be injected in cases of dysentery, violent purging and pain in the bowels.

478. INJECTION FOR LEUCORRHŒA.

Take of sulphate of zinc 10 grs., tinc of opium $\frac{1}{2}$ drm, rose water 4oz.; mix and dissolve. To be injected several times a-day.

479. ANOTHER.

Take of alum 10 grs., rose water 4oz.; mix and dissolve. To be used frequently.

480. ESSENCE OF BEEF.

Take of lean beef sliced 1lb., put it into a bottle or jar closely corked; place this in a vessel of cold water and boil for an hour or more; then decant and skim the liquid. Chicken tea may be made in the same way. Far more nourishing and palatable than beef tea, season it to suit the taste.

481. IMPERIAL DRINK.

Take of cream of tartar one drm., the outer rind of fresh lemon or orange peel half a drm., loaf sugar one ounce, boiling water two pints. When they have stood in a pitcher about ten minutes, strain off the liquor. This makes a beautiful cooling drink, and is an excellent article in fevers.

482. RINGWORM LOTION.

Take of sublimate of mercury, 5 grains; spirits of wine, 2oz.; tinc. of musk, 1 drachm; rose water, 6oz.; mix well, and rub well in.

483. WHISKERS AND MOUSTACHES.

The best method of promoting the growth of

whiskers and moustaches, is to shave the parts frequently, and use as a stimulent the ashes of burned tobacco macerated in bay water.

484. COUGH SYRUP.

Take of hoarhound, 1 quart; water, 1 quart; mix and boil down to a pint; then add two or three sticks of liquorice and a tablespoonful of essence of lemon; dose, a tablespoonful three times a day, or as often as the cough is troublesome.

485. BLACK SALVE.

Take of sweet oil, 1oz.; linseed oil, 1oz.; pulverized red lead, 1 oz.; put all into an iron dish over a moderate fire, constantly stirring until you can draw your finger over a drop of it on a board, when a little cool, without sticking; when it is done, spread on a cloth and apply as other salves.

486. SEIDLITZ POWDERS.

Take of rochelle salts, 2 drachms; bicarbonate of soda, 2 scruples; put these into a blue paper, and put 35 grains of tartaric acid into a white

paper. To use, put each into different tumblers, half fill each with water, and put a little loaf sugar, in with the acid, then pour them together and drink; this makes a very pleasant cathartic. Effervescing draught is made by leaving out the rochelle salts.

487. CAMPHOR ICE.

Take of spermaceti, $1\frac{1}{2}$ oz.; gum camphor, $\frac{3}{4}$ oz.; oil of sweet almonds, 4 teaspoonsful; mix, and apply heat just enough to melt all together. Whilst warm, pour into small moulds, then paper, and put up in tin-foil. This, for chaps on hands or lips, cannot be equalled.

488. FOR SALT RHEUM.

Take a quantity of the pokeweed, any time in summer, pound it, press out the juice, strain it into a pewter dish, and set it in the sun until it acquires the consistency of salve; then put it into an earthen mug, add to it water and beeswax sufficient to make an ointment of common consistency. Simmer the whole over a fire till thoroughly mixed; when cold, it is ready for use. To be

rubbed on the part affected. The most obstinate cases have yielded to this in three or four months. Try it.

489. ARTIFICIAL SKIN.

Dissolve gun cotton in sulphuric ether, and thicken it with gum mucilage. This article touched upon a cut or bruise, forms, immediately, an artificial skin, which cannot be washed off. It is very useful as it obviates the necessity of finger cots or bandages. It is excellent for sore nipples.

490. HAIR RESTORATIVE.

Take of sugar of lead, 1oz. ; lack sulphur, 1oz. ; essence of bergamot, $\frac{1}{2}$ oz. ; bay rum, 1 gill ; alcohol, 1 gill ; and half a teaspoonful of salt ; dissolve, first, the sugar of lead and sulphur in the alcohol, then the other ingredients ; and add the whole to a gallon of warm soft water, then bottle it tightly, and it is fit for use. To be applied several times a day. This is a most excellent article, give it a trial.

491. TO REMOVE WARTS AND CORNS.

This is very often done by means of nitrate of

silver, or some of the mineral acids ; but the best caustic for this purpose is that recommended for cancer in the skin.

492. CANCER IN THE SKIN.

No one but an impostor will presume to cure a true cancer, containing the cancer cell, and situated in the muscles. Many times hard tumors, not containing the cancer cell, are called cancers, and are removed by different methods, which is very easily accomplished, without a danger of their returning; by which means base quacks become lauded by the illiterate, for their superior skill in banishing this dreadful malady, and thereby rob the fatherless and motherless, the widow and the orphan, and finally, in consequence thereof, plunge themselves headlong over yonder precipice of eternal misery. Cancers which are situated in the skin, and are sometimes called spider cancers, &c., may be cured by the following caustic: take of sulphate of iron, 1 part; sulphate of zinc, 1 part; and acetate of lead, 1 part; pulverize each separately, as fine as possible, and mix well together; then, by means of a probe or knitting-needle, touch the cancer with it every morning for three or four

times, and you will be able to draw it all out; after which apply adhesive straps that it may heal. It is used in the same way to destroy corns and warts. In the case of cancer, physic well before applying it.

493. FOR WORMS.

Give a child one year old 15 drops of spirits of turpentine on sugar, fasting, for three mornings in succession; follow the last dose with a good dose of castor oil; this forms an excellent vermifuge. The dose of spirits of turpentine for a child two years old is 20 drops, three years old 25 drops, four years old 30 drops, &c.

494. SPASMODIC CROUP.

Genuine croup is indeed of very rare occurrence, and is a fearfully dangerous disease, the only chances are to call in a physician at once. In genuine croup, the child seems to have a cold and is hoarse for a few days previous to the attack; but the fit generally comes on suddenly in spasmodic croup, which may be treated as follows. During the fit put the child in a warm

bath, apply hot water to the throat, allow fresh air, and sprinkle the face and chest with cold water.

495. FOR FLATULENCY.

Make a tea of the seeds of anise, caraway, and coriander, and drink freely of it.

496. FOR HICCOUGH.

Take five drops of oil of anise on sugar when they commence to be troublesome.

497. FOR HEARTBURN.

This is a very disagreeable sensation, but may be banished by taking a teaspoonful of carbonate of soda dissolved in half a tumbler full of sweetened water.

498. ERYSIPELAS.

This when very bad needs the attendance of a physician; when not so bad, paint the inflamed part over with white lead, mixed with paint oil, it is an excellent remedy.

499. FOR FELON.

Poultice well with flaxseed meal until matter begins to form, then at once have it well laid open with a lance, continue the poultice for some time afterwards.

500. HAIR RESTORATIVE.

Take of black mustard seed $\frac{1}{2}$ oz., red pepper 15 grains, blood root $\frac{1}{2}$ oz., cantharides 15 grains, castile soap $\frac{1}{2}$ oz., alcohol one quart; mix all together in a bottle, let stand for a week, occasionally shaking. Perfume with oil of bergamot, and apply three or four times a day.

501. TO KILL RATS AND MICE WITHOUT POISON.

Slice up a quantity of corks, grease, and scent them with oil of anise; throw them in the way of the rats and mice; they will eat, but cannot digest them; the result is they will die.

502. EYE WATER.

One part of good brandy, to six of clean rain or

distilled water, makes an admirable eye water for most cases of sore eyes.

503. FOR CHRONIC GOUT AND RHEUMATISM.

Take of bicarbonate of potash $\frac{1}{2}$ drachm, tincture of orange 2 drachms, compound decoction of aloes 8oz., mix. Dose, a wine-glass full whenever the fit is expected. This is Sir A. Cooper's prescription.

504. FOR SICKNESS AND VOMITING.

Take of creosote 16 drops, acetic acid 16 drops, compound spirit of juniper 1oz., syrup 1oz., water 14oz.; mix the creosote with the acid, add gradually the water, and lastly the syrup and spirit. Dose from two to four tablespoonsful.

505. LAXATIVE PILL.

Take of powdered aloes 1 drachm, gamboge 10 grains, Castile soap and water sufficient to make a pill mass; mix and divide into 34 pills. Dose, one, two, or three, to be given when necessary, for torpid bowels.

506. FOR HEADACHE.

In case of a severe attack of headache the best remedy is, generally, to take a good strong physic of salts and senna. If this does not relieve it, or where the person is very frequently troubled with headache, apply a blister to the back of the neck, you will find it an excellent remedy.

507. FOR MAKING SIZE.

This, with the following four, are currier's receipts.

Take of sizing 1 quart, soft soap 1 gill, stuffing 1 gill, sweet milk $\frac{1}{2}$ pint; boil the sizing in water to a proper consistence, strain and add the other ingredients, and when thoroughly mixed it is ready for use.

508. FOR PASTE.

First coat.—Take of water 2 quarts; flour $\frac{1}{2}$ pint, castile soap 1oz.; make into paste. Second coat.—Take of first paste $\frac{1}{2}$ pint, gum tragacanth 1 gill, water 1 pint; mix all together. This will finish eighteen sides of upper.

509. SKIRTING.

This is for finishing skirting and the flesh of harness leather in imitation of oak tanning. Take of chrome yellow $\frac{1}{2}$ lb., yellow ochre 1lb., cream of tartar 1oz., soda $\frac{1}{2}$ oz., paste 5 quarts; mix well. This will finish twelve sides.

510. SKIRTING.

For the grain of skirting to imitate oak tan, take of chrome yellow, $\frac{1}{2}$ lb.; yellow ochre, $\frac{1}{2}$ lb.; cream of tartar, 1 oz.; soda, 1 oz.; paste, 2 qts.; spirits of turpentine, 1 pint. Mix well; this will finish twelve sides.

511. GRAIN BLACK.

This is for the grain of harness leather. First, stain in tallow, then take of spirits of turpentine, 1 pint; cream of tartar, 1 oz.; soda, 1 oz.; gum shell-lac, $\frac{1}{2}$ oz.; thick paste reduced thin, 2 qts. Mix well. This will finish 24 sides.

512. ANTIDOTES FOR POISONS.

The antidotes for poisoning with the strong mineral acids, such as nitric, muriatic, sulphuric, or

oxalic acids are magnesia, chalk, whiting, in milk or water; mucilaginous or soapy liquids. When sulphuric acid has been taken, use very little water if any. Irritate the throat with a feather to produce vomiting.

The antidote for poisoning with corrosive sublimate or any other preparation of mercury, is albumen, as whites of eggs, in large quantity, flour and water, and milk. The whites of eggs are best. The antidotes for poisoning by opium, or any of its preparations, as morphia, laudanum, &c., are the stomach pump if it can be had; emetic of tartar emetic, 2 to 5 grains, or sulphate of zinc, 15 to 30 grains, or sulphate of copper, 12 to 15 grs., for an adult. The sulphates of zinc or copper are best, because they act quicker. External excitation, keep in motion, mechanical excitement of respiration, cold effusion to the head and face, feet in hot water, electro-magnetism, internal stimulants, as bicarbonate of ammonia, 5 to 25 grains in water, carbonate of ammonia, 5 to 15 grains, in water, coffee and vegetable acids. Some propose as an antidote for every case of poisoning, half a pint of bland oil, as sweet oil, fresh butter melted to oil, &c., to be drank at once, for an adult.

513. TREATMENT OF DROWNING.

If respiration has ceased when the body is taken out of the water, it should instantly be commenced artificially, by putting a pipe into one nostril, and closing the mouth and the other nostril, and very gently blowing through it about 15 times in a minute; but it is a better plan to use a small pair of bellows, putting its muzzle into the nostril, at the same time the body should be wiped dry, and be assiduously rubbed with hot cloths; hot bricks and bottles of hot water should be put into the armpit, between the thighs, and to the feet; the head should be raised, the nostrils irritated with a feather, or with the fumes of hartshorn, and a warm injection of turpentine, made as follows, may be thrown up—oil of turpentine, 3 drachms; gruel, $\frac{1}{2}$ a pint; and the yolk of 1 egg. Incorporate the turpentine with the egg, then add the gruel. Galvanism should be resorted to, if respiration is not quickly restored. As soon as the patient can swallow, he should have some weak wine and water; and soon afterwards an emetic of a large tablespoonful of mustard, mixed with 6ozs. of water, to clear the stomach of the water which he has swallowed, and to restore the circulation

by the impetus of vomiting. After some hours he will suffer from severe headache and fever, which must be relieved by bleeding, purgatives, &c., which will be attended to by a physician, who will be present by this time. A case is related in which life was restored by the most persevering friction, which was kept up for eight hours before the humanity of the surgeon, Dr. Douglass, of Havre, was rewarded by a return of respiration.

514. ELASTIC CEMENT FOR BELTS.

Take of white glue, 1 lb., dry white lead, 1 lb., alcohol, $\frac{1}{2}$ pint, rain water, 3 pints, and proceed as directed in receipt No. 417. When ready for use apply to the ends of the belt, lay them together and place upon them a heavy weight until perfectly dry, then use the belt as you please.

515. GOOD SAMARITAN OR PAIN-KILLER.

Take of 95 per cent alcohol 2 quarts, and add to it the following articles: oils of sassafras and hemlock, spirits of turpentine, balsam of fir, chloroform, tincture of catechu and guaiacum, of each 1 oz., oil of origanum, 2 oz., oil of wintergreen, $\frac{1}{2}$

oz., and gum camphor, $\frac{1}{2}$ oz. Let all be well incorporated and you have the most excellent pain killer that was ever made. It is good for rheumatism, headache, neuralgia, cuts, sprains, burns, bruises, spinal affections, ear-ache, tooth-ache, sore throat, &c. This is used internally and externally, the dose internally is 10 drops; take on sugar.

516. DIAMOND PASTE FOR RAZORS.

By rubbing a little of this paste on your razor-strop, it is astonishing how speedily you will be able to sharpen a razor. It is made simply by mixing flour of emery and sweet oil, to the consistence of paste.

517. FOR STAGGERS IN SHEEP.

Dissolve assafoetida in warm water, and put half a tablespoonful in each ear of the sheep. It is a speedy remedy.

518. WATER-PROOF FOR LEATHER.

Take of linseed oil, 1 pint; yellow wax and white turpentine, of each, 2oz.; burgundy pitch,

1oz. ; melt all together, and colour with lampblack. This being applied to boots, you may stand in water all day, and your feet will be dry at night.

519. TO BROWN GUN-BARRELS.

Rub the barrel, after it is finished, with aquafortis, or spirit of salt diluted with water ; leave it by for a week, till a complete coat is formed ; then apply a little oil, and after rubbing the surface dry, polish it with a hard brush and a little beeswax.

520. LIQUID GLUE.

Put 1oz. of borax into a pan with 1 quart of water, set it on the fire, when melted, which will be very soon, put in 8oz. of gum-shellac, and boil until dissolved ; if too thin add more gum ; when cool bottle for use.

521. TO TAKE INK SPOTS OUT OF MAHOGANY.

Apply spirits of salt with a rag, until the spot disappears, and immediately wash with clean water ; or to half a pint of soft water put 1oz.

of oxalic acid, and $\frac{1}{2}$ oz. of butter of antimony; shake it well, and when dissolved it will be very useful for extracting stains out of mahogany, as well as ink, if not of too long standing.

522. TO CLEAN MARBLE, SIENNA,
JASPER, PORPHYRY, &c.

Mix up a quantity of strongest soap-lees with quicklime, to the consistence of milk, and lay it on the stone, &c., for 24 hours; clean it afterwards with soap and water, and it will appear as new. This may be improved by rubbing or polishing it afterwards with fine putty powder and olive oil. This is a beautiful article for cleaning marble monuments, &c.

523. TO CLEAN SILVER FURNITURE.

Lay the furniture piece by piece upon a charcoal fire; and when they are just red, take them off and boil them in tartar and water, and your silver will have the same beauty as when first made. Try this method once and you will never forsake it; it will not remove a portion of the silver, as articles that are sold in vials, boxes, &c., for this purpose will do.

524. A FINE BLACK VARNISH.

Take 2ozs. of bitumen of Palestine, 2ozs. of resin, and 12ozs. of umber; melt them separately, and afterwards mix them together over a moderate fire; then pour upon them, while on the fire, 6ozs. of clear boiled linseed oil, and keep stirring the whole from time to time; take it off the fire, and, when pretty cool, pour in 12ozs. of essence of turpentine. This varnish is for coaches and iron work.

525. TO PAINT SAIL-CLOTH, SO AS TO MAKE IT PLIANT, DURABLE, AND WATER-PROOF.

Grind 96lbs. of English ochre with boiled oil, and add to it 16lbs. of black paint; dissolve 1lb. of yellow soap in one pail of water, on the fire, and mix it while hot with the paint. Lay this composition, without wetting it, upon the canvass, as stiff as can conveniently be done with the brush, so as to form a smooth surface; the next day, or the day after, (if the latter, so much the better,) lay on a second coat of ochre and black, with a very little, if any, soap; allow this coat a day to dry, and then finish the canvass with black paint.

526. PHOTOCROMATIC OIL PAINTING.

INSTRUCTIONS:

Chemicals used in executing them:—chemical varnish, No. 1, 2oz. damar varnish, 1oz. spirits turpentine; (mix well together.) Finishing varnish, No. 2, 1oz. spirits turpentine, 1oz. alcohol, 1oz. damar varnish. Solution No. 3, 2ozs. vinegar, 1oz. salt, 1 quart water. A flat camel's hair brush is needed for varnishing. Take a smooth pane of common window-glass, any size you choose, clean it well, then varnish one side of it with chemical varnish No. 1, lay it away where it will be perfectly free from dust, and let it dry twenty-four hours; next varnish the same side of the glass again, and let it dry about one half hour, or until the varnish becomes sticky. Immediately after varnishing the glass the second time, take the print that you wish to get an impression of, and immerse it in the solution No. 3; put the solution in a flat pan, and lay the print in with the face side up; let the print lay in the solution about five minutes, or until the paper is completely saturated, then remove it, taking care not to stretch it, and lay it on paper with the face side up, in order that the solution may dry from the face of the print. In this way prepare the print, getting it ready by the time

the glass has dried one half hour. Next, carefully lay the face of the print on the varnished side of the glass, being particular to lay it on smooth and press it firmly to the glass, so as to exclude every particle of air; should there be any air left under the paper, it will show itself in spots, and must be pressed out. You now lay it away and let it dry another twenty-four hours; then, wet the back part of the print with water and with your hand or a wet cloth, rub the paper from the back of the print until it is so thin that the outlines of the picture can be seen from the back and of uniform thickness. You next spread a thin coat of finishing varnish (No. 2) on it and lay it away to dry. This will render it perfectly clear and transparent.—After this coat of varnish has dried, rub it over with a bit of fine sand paper, to make it smooth, and finish with two or three coats of No. 2 varnish. When dry, put it in a frame with the varnished side out, placing a sheet of light coloured paper on the back, this will give it the appearance of an oil painting. By following these directions you cannot fail to produce a beautiful picture.

527. FOR THE COMPLEXION.

Boil a small piece of gum benzoin in some spirits

of wine till it is dissolved, (five minutes boiling will be sufficient,) then bottle for use. A few drops of this in a glass of soft water (sufficient to make the water of a milky colour) makes a delicious wash; apply with a towel or linen cloth. This article will make the skin as soft as velvet, and will constantly preserve rosy cheeks and lips, and for this it has not an equal in the world; besides, it is as harmless as a sun-shower. As it is not a paint, it will not act just on the moment when applied.

528. ORIENTAL CREAM OF ROSES.

Take of tincture of elder blossoms $\frac{1}{2}$ oz., best beef marrow 1 teaspoonful, orange flower water $\frac{1}{2}$ pint, cassia buds 1oz., blanched bitter almonds 2 oz., spirits of oriental roses 4 drms.; mix all, and when the solution acquires the colour and consistency of milk it is fit for use. This article is for beautifying the complexion, making the skin as soft, as fair, and as rosy as that of a healthy infant; apply at pleasure. It is not only harmless, but will prove a speedy cure for all pimples, blotches, &c.

529. INSTRUCTION FOR GILDING.

Dissolve a gold dollar in nitro-muriatic acid,— (2ozs. muriatic to 1 of nitric,) then dissolve a $\frac{1}{4}$ lb. of copperas in a pint of hot water, and pour it into the dish containing the gold and acid, pouring in a little at a time, till it stops boiling or foaming up; then let it stand and settle about six hours; then strain off the copperas-water carefully, and the gold will appear like a brown or dark yellow powder in the bottom of the dish. You will then proceed to wash the gold, which is done by pouring hot water on it; let it stand and settle a few minutes, and then drain off. Continue washing in this manner till there is no acid or copperas taste; then add to the gold in the bottom of the dish from $1\frac{1}{2}$ to 2oz. cyanuret potassa, dissolved in about $\frac{1}{2}$ pint pure soft water. The solution is then ready for use. Gild by laying a piece of pure zinc in contact with the article to be gilded, in the solution.

530. DIRECTIONS FOR SILVERING.

Dissolve a silver dollar in about 2 ozs. of nitric acid by heating; then dissolve a tablespoonful of

salt in about a quart of water ; pour it into the dish with the silver and acid ; let it stand and settle a few minutes, and the silver will settle to the bottom in a white powder. Then drain off the water carefully, and add more water, then drain off again. Continue washing in this manner till no acid or salt taste remains ; then add a quart or more of pure soft water, and cyanuret potassa enough to take it up, or nearly so. The solution is then nearly ready for use.

Silver by laying a piece of zinc in contact with the article, the same as in gilding. If the article you are silvering or gilding corrodes or turns black, it wants a little more cyanuret. In gilding or silvering, the article must be thoroughly cleaned, and great care must be taken that the water used is of the purest kind.

When the plating is as heavy as you wish, polish it with a mixture of chalk and alcohol, or of chalk alone, applied with a fine brush, or else a bit of chamois leather or rag.

If you wish to put on a very heavy coat of silver or gold, instead of using zinc alone as a battery, use the following, attach a piece of copper to one end of an iron wire about ten inches long, and a piece of zinc to the other end, and place both zinc

and copper in contact with the article being silvered or gilded.

531. USING FRENCH POLISH.

There is a mode of using shell-lac varnish which is sometimes denominated the German, but more commonly the French mode. It merits to be generally known, as the process is easy and economical, and the effect beautiful. It has been much employed by cabinet and musical instrument makers, but is not yet so extensively practised as it merits to be. The varnish is applied by means of what is called a rubber, made by rolling up a piece of thick woollen cloth, which has been *torn* off so as to have a soft, elastic edge. The varnish, put into a narrow-mouthed bottle, is applied to the middle of the flat face of the rubber by laying the rubber on the mouth of the bottle and quickly shaking the varnish at once, as the rubber will thus imbibe a sufficient quantity to varnish a considerable extent of surface. The rubber is then enclosed in a soft linen cloth doubled, the remainder of the cloth being gathered together at the back of the rubber to form a handle to hold it by; and the face of the linen cloth must be moistened with a little raw lin-

seed-oil, which may either be coloured with alkanet root or not, applied with the finger to the middle of it. The work to be varnished should be placed opposite to the light, in order that the effect of the polishing may be better seen, and a surface of from ten to eight feet square may be varnished at once. The rubber must be quickly and lightly rubbed upon the surface of the article to be varnished, and the rubbing continued until the varnish becomes nearly dry. The coil of woollen cloth must then be again wetted with the varnish, (no more oil need be applied to the surface of the linen cloth,) and the rubbing renewed till the varnish becomes nearly dry as before; a third coat must be applied in the same manner, then a fourth with a little oil, which must be followed by two others without oil, as before. You proceed thus until the varnish has acquired some thickness, which will be after a few repetitions of the series. Apply then a little alcohol to the inside of the linen cloth, and wet the coil with the varnish; after which, rub very quickly, lightly, and uniformly, over every part of the varnished surface, which will tend to make it even, and very much conduce to its polish. The linen cloth must now be wetted with a little alcohol and oil, without varnish; and the varnished surface being

rubbed over, with the precautions last mentioned, until it is nearly dry, the effect of the operation will be seen. If it be found not complete, the process must be continued, with the introduction of alcohol in its turn as directed before, until the surface becomes smooth and of a beautiful lustre. The preceding process is that in general use; but Dr. Jones recommends, in the *Franklin Journal*, a rubber of a different sort, as well as a simpler mode of employing it. He takes a piece of thick woollen cloth, six or eight inches in diameter, and upon one side of this pours a teaspoonful of the varnish; he then collects the edges together, so as to enclose the varnish in the cloth and form a handle by which to hold it: this is finally covered with a piece of oiled linen cloth, and the rubber is ready for use. More varnish is added as often as it is required; and when it becomes occasionally too thick to ooze through, a little alcohol is poured into the cloth. Some difficulties may be at first experienced in performing this process; but Dr. Jones states that a very little practice will enable any handy person to surmount them. The peculiar advantage said to attend it is, that a beautiful polish may be at once obtained by a continued ap-

plication of the rubber in this way ; while, according to the method previously described, successive coats of varnish, which require considerable time to dry, must be used, and a great deal of additional trouble incurred. In varnishing recesses or carved work, where parts of the surface are difficult to reach with the rubber, a spirit varnish, made with or without lac of the usual gum resins, and considerably thicker than that used for the rest of the work, may be applied to those parts with a brush or hair pencil.

532. LACQUER FOR BRASS.

Seed-lac, 6ozs. ; amber or copal, ground on porphyry or very clean marble, 2ozs. ; dragon's blood, 40 grains ; extract of red sandal-wood, 30 grains ; oriental saffron, 36 grains ; pounded glass, 4 ozs. ; very pure alcohol, 40ozs. Articles, or ornaments of brass, to which this varnish is to be applied, should be exposed to a gentle heat and then dipped into the varnish. Two or three coatings may be thus applied, if necessary. Articles varnished in this manner may be cleaned with water and a bit of dry rag.

533. TO CLEAN OLD BRASS WORK FOR LACQUERING.

First boil a strong lye of wood-ashes, which you may strengthen with soap-lees; put in your brass work, and the lacquer will immediately come off; then have ready a pickle of aquafortis and water, strong enough to take off the dirt; wash it immediately in clean water, dry it well, and lacquer it.

534. TO PREPARE FISH OIL FOR PAINT.

Into a cask which will contain about 40 galls., put 32 galls. of good common vinegar; add to this 12lbs. of litharge, and 12lbs. of white copperas in powder: bung up the vessel, and shake and roll it well twice a-day for a week, when it will be fit to put into a ton of whale, cod, or seal oil, (but the southern whale oil is to be preferred, on account of its good colour and little or no smell:) shake and mix all together, when it may settle until the next day; then pour off the clear, which will be about seven-eighths of the whole. To clear this part, add 12 galls. of linseed oil, and 2 galls. of spirits of turpentine; shake them well together, and, after the whole has settled two or three days,

it will be fit to grind white lead and all fine colours in ; and, when ground, cannot be distinguished from those ground in linseed oil, unless by the superiority of colour. If the oil be wanted only for coarse purposes, the linseed oil and oil of turpentine may be added at the same time that the prepared vinegar is put in ; and, after being well shaken up, is fit for immediate use, without being suffered to settle. The residue or bottom, when settled by the addition of half its quantity of fresh lime-water, forms an excellent oil for mixing with all the coarse paints for preserving outside work. All colours ground in the above oil, and used for inside work, must be thinned with linseed oil and oil of turpentine.

Gain by the above process.

One ton of fish oil, or 252 galls.....	\$151.20
32 galls. of vinegar, at 12½ cts. per gall...	4.00
12 lbs. litharge, at 7 cts. per lb.....	84
12 lbs. white copperas, at 8 cts. ditto.....	96
12 galls. of linseed oil, at 90 cts. per gall.	10.80
2 galls. of spirit of turpentine, at 40 cts.	80
	<hr/>
	\$168.60

252 galls. of fish oil
 12 ditto linseed oil
 2 ditto spirit of turpentine
 32 ditto vinegar

298 galls., at 90 cts. per gall. \$268.20
 Deduct the expense..... 168.60

\$ 99.60

535. PAINTING IN MILK.

In consequence of the injury which has often resulted to sick and weakly persons from the smell of common paint, the following method of painting with milk has been adopted by some workmen, which, for the interior of buildings, besides being as free as distemper from any offensive odour, is said to be nearly equal to oil-painting in body and durability. Take $\frac{1}{2}$ gall. of skimmed milk, 6ozs. of lime newly slaked, 4ozs. of poppy, linseed, or nut-oil, and 3lbs. of Spanish white. Put the lime into an earthen vessel or clean bucket, and having poured on it a sufficient quantity of milk to make it about the thickness of cream, add the oil in small quantities at a time, stirring the mixture

with a wooden spatula. Then put in the rest of the milk, and afterwards the Spanish white. It is, in general, indifferent which of the oils above-mentioned you use; but, for a pure white, oil of poppy is the best. The oil in this composition, being dissolved by the lime, wholly disappears; and, uniting with the whole of the other ingredients, forms a kind of calcareous soap. In putting in the Spanish white, you must be careful that it is finely powdered and strewed gently over the surface of the mixture. It then, by degrees, imbibes the liquid and sinks to the bottom. Milk skimmed in summer is often found to be curdled; but this is of no consequence in the present preparation, as its combining with the lime soon restores it to its fluid state. But it must on no account be sour; because, in that case, it would, by uniting with the lime, form an earthy salt, which could not resist any degree of dampness in the air. Milk paint may likewise be used for out-door objects by adding to the ingredients before-mentioned 2ozs. each more of oil and slaked lime, and 2ozs. of Burgundy pitch. The pitch should be put into the oil that is to be added to the milk and lime, and dissolved by a gentle heat. In cold weather, the milk and lime must be warmed, to prevent the

pitch from cooling too suddenly, and to enable it to unite more readily with the milk and lime. Time only can prove how far this mode of painting is to be compared, for durability, with that in oil; for the shrinking to which coatings of paint are subject depends in great measure upon the nature and seasoning of the wood. The milk paint used for in-door work dries in about an hour; and the oil which is employed in preparing it entirely loses its smell in the soapy state to which it is reduced by its union with the lime. One coating will be sufficient for places that are already covered with any colour, unless the latter penetrate through it and produce spots. One coat will likewise suffice, in general, for ceilings and stair-cases; two will be necessary for new wood. Milk painting may be coloured, like every other in distemper, by means of the different colouring substances employed in common painting. The quantity I have given in the receipt will be sufficient for one coat to a surface of about twenty-five square yards.

536. ETHEREAL SOLUTION OF GOLD.

The following mode of effecting this solution (used chiefly for gilding steel) is recommended by

Mr. H. Mill, in the "Technical Repository," as being superior to any previously made known. "The instructions," he says, "given in most elementary works on chemistry for this purpose are either erroneous or not sufficiently explicit." The process answers equally well for either gold or platina. Dissolve any quantity of gold or platina in nitro-muriatic acid, (*aqua regia*,) until no further effervescence is occasioned by the application of heat. Evaporate the solution of gold or platina, thus formed, to dryness, in a gentle heat, (it will then be freed from all excess of acid, which is essential,) and re-dissolve the dry mass in as little water as possible: next take an instrument which is used by chemists for dropping liquids, known by the name of a separating funnel, having a pear-shaped body, tapering to a fine sharp point, and a neck capable of being stopped with the finger or a cork, which may contain a liquid once or more; fill it with the liquid about one-quarter part, and the other three parts must be filled with the very best sulphuric ether. If this be rightly managed, the two liquids will not mix. Then place the tube in a horizontal position, and gently turn it round with the finger and thumb. The ether will very soon be impregnated with the gold or platina,

which may be known by its changing its colour ; replace it in a perpendicular position, and let it rest for twenty-four hours ; having first stopped up the upper orifice with a cork. The liquid will then be divided into two parts—the darkest colouring being underneath. To separate them, take out the cork and let the dark liquid flow out : when it has disappeared, stop the tube immediately with the cork, and what remains in the tube is fit for use, and may be called gilding liquid. Let it be put into a bottle, and tightly corked. The muriate of gold or platina, formed by digesting these metals in nitro-muriatic acid, must be entirely free from all excess of acid ; because it will otherwise act too forcibly on the steel, and cause the coating of gold to peel off. Pure gold must be employed ; the ether must not be shaken with the muriate of gold, as is advised in chemical publications, for it will be sure, then, to contain acid ; but if the two liquids be brought continually into contact by the motion described, the affinity between ether and gold is so strong as to overcome the obstacle of gravity, and it will hold the gold in solution. The ethereal solution may also be concentrated by gentle evaporation.

537. VARNISH POLISH.

Take 2ozs. of tripoli, reduced to fine powder; put it into an earthen pot or basin, with water to cover it; then take a piece of fine flannel, four times doubled, lay it over a piece of cork or rubber, and proceed to polish your varnish, always wetting it with the tripoli and water. You will know when the process is completed, by wiping a part of the work with a sponge and observing whether there is a fair and even gloss. Take a bit of mutton-suet and fine flour, and clean off the work. Or, the powdered tripoli may be mixed up with a little pure oil, and used upon a ball of serge, or of chamois leather, which is better. The polishing may afterwards be completed with a bit of serge or cloth, without tripoli. Putty powder, and even common whiting and water, are sometimes used for polishing; but they produce a very inferior effect to tripoli, except in the case of ivory, for which putty and water, used upon a rubber made of a hat, forms the best and quickest polish. Putty and water may likewise be used, in the same manner as just mentioned for ivory, in finishing off the polish of pearl work, after it has first been polished very smooth with pumice-stone, finely

powdered, and well washed to free it from impurities and dirt.

538. VARNISH FOR COLOURED DRAWINGS.

Mix together 1oz. of Canada balsam and 2ozs. of spirits of turpentine. Before applying the composition, size the drawing or print with a solution of isinglass in water; when this is dry, apply the varnish with a camel's-hair brush. The use of this varnish gives to coloured drawings and prints an appearance resembling that of oil paintings.

539. VARNISH FOR GLASS.

Reduce a quantity of gum tragacanth to powder, and let it dissolve for twenty-four hours in the white of eggs well beat up; then rub it gently on the glass with a brush.

540. TO CLEAN PICTURES.

Having taken the picture out of its frame, take a clean towel, and making it quite wet, lay it on the face of your picture, sprinkling it from time

to time with clear soft water : let it remain wet for two or three days ; take the cloth off, and renew it with a fresh one ; after wiping your picture with a clean wet sponge, repeat the process till you find all the dirt soaked out of your picture ; then wash it well with a soft sponge, and let it get quite dry ; rub it with some clear nut or linseed oil, and it will look as well as when freshly done.

541. ANOTHER METHOD.

Put into two quarts of strong lye a quarter of a pound of Genoa soap rasped very fine, with about a pint of spirits of wine ; let them simmer on the fire for half an hour, then strain them through a cloth ; apply it with a brush to the picture, wipe it off with a sponge, and apply it a second time, which will effectually remove all dirt ; then, with a little nut oil warmed, rub the picture, and let it dry ; this will make it look as bright as when it came out of the artist's hands.

542. VARNISH FOR CLOCK FACES, &c.

Take of spirits of wine, 1 pint ; divide it into four parts ; mix one part with half an ounce of gum

mastic, in a bottle by itself; one part of spirits and half an ounce of gum sandrac in another bottle; and one part of spirits and half an ounce of the whitest part of gum benjamin; mix and temper them to your mind; if too thick, add spirits; if too thin, some mastic; if too soft, some sandrac or benjamin. When you use it, warm the silvered plate before the fire, and with a flat camel-hair pencil stroke it over till no white streaks appear; which will preserve the silvering for many years.

543. VARNISH FOR BALLOONS.

Take some linseed oil, rendered drying by boiling it with 2ozs. of sugar of lead and 3ozs. of litharge for every pint of oil till they are dissolved, which may be in half an hour. Then put 1lb. of birdlime and half a pint of the drying oil into an iron or copper vessel, whose capacity should equal about a gallon, and let it boil very gently over a slow charcoal fire, till the birdlime ceases to crackle, which will be in about half or three-quarters of an hour; then pour upon it $2\frac{1}{2}$ pints more of the drying oil, and let it boil about an hour longer, stirring it frequently with an iron or wooden spatula. As the varnish, whilst boiling, and especially when nearly ready, swells very much, care should be

taken to remove, in those cases, the pot from the fire, and to replace it when the varnish subsides ; otherwise, it will boil over. Whilst the stuff is boiling, the operator should occasionally examine whether it has boiled enough, which may be known by observing whether, when rubbed between two knives, which are then to be separated from one another, the varnish forms threads between them, as it must then be removed from the fire. When nearly cool, add about an equal quantity of oil of turpentine. In using the varnish, the stuff must be stretched, and the varnish applied lukewarm. In 24 hours it will dry. As the elastic resin, known by the name of Indian rubber, has been much extolled for a varnish for balloons, the following method of making it, as practised by M. Blanchard, may not prove unacceptable : dissolve elastic resin cut small in five times its weight of rectified essential oil of turpentine, by keeping them some days together. Then pour 1oz. of this solution in 8ozs. of drying linseed oil for a few minutes ; strain the solution, and use it warm.

544. TO PREPARE RENNET TO TURN MILK.

Take out the stomach of a calf as soon as killed, and scour it inside and out with salt ; after it is

cleared of the curd always found in it, let it drain a few hours, then sew it up with two good handfuls of salt in it, or stretch it well salted on a stick, or keep it in the salt wet; and when wanted soak it a little in fresh water, and repeat the same when again required.

545. TO MAKE CHEESE.

Put the milk into a large tub, warming a part till it is of a degree of heat quite equal to new; if too hot the cheese will be tough. Put in as much rennet as will turn it, and cover it over; let it stand till completely turned, then strike the curd down several times with the skimming-dish, and let it separate, still covering it. There are two modes of breaking the curd, and there will be a difference in the taste of the cheese according as either is observed: one is, to gather it with the hands very gently towards the side of the tub, letting the whey pass through the fingers till it is cleared, and ladling it off as it collects; the other is, to get the whey from it by early breaking the curd; the last method deprives it of many of its oily particles, and is therefore less proper. Put the vat on a ladder over the tub, and fill it with curd by the skimmer; press the curd close with

your hand, and add more as it sinks, and it must be finally left two inches above the edge. Before the vat is filled, the cheese-cloth must be laid at the bottom, and when full, draw smoothly over on all sides. There are two modes of salting cheese; one by mixing it in the curd while in the tub, after the whey is out, and the other by putting it into the vat and crumbling the curd all to pieces with it, after the first squeezing with the hands has dried it. The first method appears best on some accounts, but not on all, and therefore the custom of the country must direct. Put a board under and over the vat, and place it in the press; in two hours turn it out and put a fresh cheese-cloth; press it again for eight or ten hours; then salt it all over, and turn it again in the vat, and let it stand in the press fourteen or sixteen hours, observing to put the cheese last made undermost. Before putting them the last time into the vat, pare the edges if they do not look smooth. The vat should have holes at the sides and at bottom, to let all the whey pass through; put on clean boards, and change and scald them.

546. TO PRESERVE CHEESE SOUND.

Wash in a warm whey, when you have any, wipe

it once a month, and keep it on a rack. If you want to ripen it, a damp cellar will bring it forward. When a whole cheese is cut, the larger quantity should be spread with butter inside, and the outside wiped to preserve it. To keep those in daily use moist, let a clean cloth be wrung out from cold water, and wrapt round them when carried from the table.

547. TO MAKE CREAM CHEESE.

Put 5 quarts of strippings, that is, the last of the milking, into a pan, with 2 spoonsful of rennet. When the curd is come, strike it down two or three times with the skimming-dish, just to break it; let it stand two hours, then spread a cheese-cloth on a sieve, put the curd on it, and let the whey drain; break the curd a little with your hand, and put it into a vat with a 2lb weight upon it; let it stand twelve hours, take it out, and bind a fillet round; turn every day till dry, from one board to another, cover them with nettles or clean dock leaves, and put between two pewter-plates to ripen. If the weather be warm, it will be ready in three weeks.

548. ELEGANT AND INGENIOUS ARTS, &c.

Accomplishments.—These are very desirable for

the household, because the inmates are made happier by refined and ingenious arts and pursuits, and are fitted to improve the taste of others. Children and young persons, of both sexes, should learn as many of these arts as they possibly can without neglecting duties. Pleasant modes of employing leisure hours save people from many temptations, and add much to the happiness of life.

549. GRECIAN PAINTING.

Grecian painting is the art of imitating *oil* paintings. This truly beautiful imitation, if well done, is so perfect that none save connoisseurs can discern, at sight, the difference.

Engravings best suited to this style of painting are mezzotint or aquatint, though fine lithographs are used.

Rule First.—Procure a frame one inch longer than the engraved part of the print. *Second.*—Cut the engraving the size of the frame, then make a stiff paste, and spread thickly on the frame. *Third.*—Place the engraving face down and sponge it gently with water; then press the frame firmly and evenly down on; leave it till entirely dry (not by the fire) and it will become even and tight.

To make the Grecian Varnish.—Take one part turpentine, two parts alcohol, (90 proof,) three parts balsam of fir, and mix.

To use the Varnish.—Pour sufficient spirits of turpentine on the back of the picture to moisten it well, then put on the varnish and rub it *thoroughly* with a stiff brush, and continue to apply it until the picture is perfectly transparent.

Spots.—Leave the picture for twenty-four hours, after which if white spots appear, showing that the varnish has not been effectual, repeat the process. Sometimes it has to be done several times.

Drying.—Place the picture, face downward, where it will be free from dust, and leave it three or four days.

Paints.—These are put on the back of the engraving.

Eyes.—For blue eyes, permanent blue and white; for hazel eyes, yellow ochre and vandyke brown.

Flesh Tints.—Flake white, with a very little vermilion and Naples yellow.

Foliages.—Chrome yellow and Prussian blue, with any of the browns.

Sky.—Clouds touched in with white; the rest permanent blue and white.

Water.—The light parts with white, the rest the same as the sky. If a bright scene, and with trees, of a greenish brown.

Hair and Eyebrows.—Yellow ochre and vandyke brown, or raw sienna.

Backgrounds.—The most agreeable tint is a greenish brown.

White Background.—Flake and silver white.

Buff Background.—Naples yellow.

Orange Background.—Chrome yellow, with vermillion.

Blue Background.—Flake white and Prussian blue.

Gray Background.—White, Prussian blue, and vermillion.

Pink Background.—White and vermillion.

Crimson Background.—Vermillion and white, with carmine.

Green Background.—Chrome yellow and Prussian blue.

Paints for the front of the picture.—Drying oil must be used with all the colours on the front.

Shading for the flesh on the front.—Carmine and vandyke brown laid on lightly, and the edges touched off with the finger.

Cheeks.—Carmine; soften the edges carefully.

Lips.—Carmine, with a touch of vermilion.

Hair and Eyebrows.—Yellow lake and vandyke brown.

Draperies.—These are always painted on the back, and shaded on the front with vandyke brown.

Backgrounds.—If plain, glaze with yellow lake.

Foliages.—Yellow lake and vandyke brown.

General Directions.—*First*—Lay the paint thickly on the back, and be careful to cover every part, but not to go over the edges.

Second.—When the painting is finished let it dry four days, and then cover the front with a coat of mastic varnish.

Materials required, are a palette, palette-knife, flat varnish brush, three sizes of bristle brushes, three sizes of table brushes, drying oil, mastic varnish, spirits of turpentine, Grecian varnish.

Colours used are oil colours in tubes. Those generally needed are silver white, Naples yellow, yellow ochre, brilliant yellow, vermilion, Prussian blue, raw sienna, ivory black, carmine, yellow lake, vandyke brown.

If economy is an object, some of the above-mentioned materials can be dispensed with.

550. DIAPHANIE.

This is a beautiful, useful, and inexpensive art, easily acquired, and producing imitation of the richest and rarest stained glass; and also of making blinds, screens, skylights, Chinese lanterns, &c., in every variety of colour and design. In decorating his house, a gentleman spends as much money as he can conveniently spare; the elegancies and refinements of modern taste demand something more than mere comfort; yet though his walls are hung with pictures, his drawing-room filled with bijouterie, how is it that the windows of his hall, his library, his staircase, are neglected? The reason is obvious. The magnificent historical glass might be envied, but could not be brought within the compass of ordinary means. Recent improvements in printing in colours led the way to this beautiful invention, by which economy is combined with the most perfect results. A peculiar kind of paper is rendered perfectly transparent, upon which designs are printed in glass colours, (*vitro de couleurs*,) which will not change with the light. The paper is applied to the glass with a clear white varnish, and when dry, a preparation is finally applied, which in-

creases the transparency, and adds tenfold brilliancy to the effect. There is another design, printed in imitation of the half-light (*abatiour*;) this is used principally for a ground, covering the whole surface of the glass, within which (the necessary spaces having been previously cut out before it is stuck on the glass,) are placed medallion centres of Watteau figures, perfectly transparent, which derive increased brilliancy from the semi-transparency of the surrounding country. To ascertain the quantity of designs required, measure your glass carefully, and then calculate how many sheets it will take. The sheets are arranged so that they can be joined together continuously, or cut to any size or shape.

Practical Instructions.—Choose a fine day for the operation, as the glass should be perfectly dry and unaffected by the humidity of the atmosphere. Of course, if you have a choice, it is more convenient to work on your glass before it is fixed in the frame. If you are working on a piece of unattached glass, lay it on a flat table, (a marble slab is preferable,) over which you must previously lay a piece of baize or cloth to keep the glass steady. The glass being thus fixed, clean and polish the side on which you intend to operate, (in windows

this is the inner side,) then with your brush lay on it very equably a good coat of the prepared varnish; let this dry for an hour, more or less, according to the dryness of the atmosphere and the thickness of the coat of varnish. Meantime cut and trim your designs carefully to fit the glass, (if it is one entire transparent sheet you will find it little trouble;) then lay them on a piece of paper, face downwards, and damp the back of them with a sponge, applied several times, to equalise the moisture. After this operation, arrange your time so that your designs may now be finally left to dry for fifteen minutes before application to the glass, the varnish on which has now become tacky or sticky, and in a proper state to receive them. Apply the printed side next to the glass without pressure; endeavour to let your sheet fall perfectly level and smooth on your glass so that you may avoid leaving creases, which would be fatal. Take now your palette, lay it flat on the design, and press out all the air bubbles, commencing in the centre, and working them out from the sides; an ivory stick will be found useful in removing creases; you now leave this to dry, and after twenty-four hours apply a slight coat of the liqueur diaphane, leaving it another day, when

if dry, apply a second coat of the same kind, which must be left several days : finally, apply a coat of varnish over all. If these directions are carefully followed, your glass will never be affected by time or by any variations in the weather : it will defy hail, rain, frost and dust, and can be washed the same as any ordinary stained glass, to which, in some respects, it is even superior. It is impossible to enumerate the variety of articles to the manufacture of which diaphanie may be successfully applied as it is not confined to glass, but can be done on silk, parchment, paper, linen, &c., after they have been made transparent, which may be accomplished in the following manner :—stretch your paper, or whatever it may be, on a frame or drawing board, then apply two successive coats (a day between each,) of diaphanous liquor, and after leaving it to dry for several days, cover it with a thin layer of very clear size, and when dry it will be in a fit state to receive the coat of varnish and the designs. Silk, linen, or other stuffs, should be more carefully stretched, and receive a thicker coat of size than paper or parchment ; the latter may be strained on a drawing or any other smooth board, by damping the sheet, and after pasting the edges, stretching it down while damp. Silk, linen, or

other stuffs require to be carefully stretched on a knitting or other suitable frame. Take great care to allow, whatever you use, time to dry before applying the liqueur diaphane. All kinds of screens, lamp-shades, and glasses, lanterns, &c., &c., may be made in this way, as heat will produce no effect upon them. The transparent pictures are successful, because they may be hung on a window frame or removed at will, and the window blinds are far superior to any thing of that kind that have yet been seen. Instead of steeping the designs in the transparent liquor at the time of printing them, which was previously done in order to show their transparency to the purchaser, but which was practically objectionable, as the paper in that state was brittle, and devoid of pliancy, necessitating also the use of a peculiarly difficult vehicle to manage (varnish) in applying it to the glass, the manufacturer now prepares his paper differently, in order to allow the use of parchment size in sticking them on the glass. The liqueur diaphene, which is finally applied, renders them perfectly transparent. In this mode of operation, no delay is requisite, the designs being applied to the glass immediately after laying on the size, taking care to press out all the air bubbles, for which purpose a roller will

be found indispensable. The designs should be damped before the size is applied to them. We are of opinion that this art may be applied to the production of magic-lantern slides, dissolving views, and dioramic effects; though we are not aware whether such experiments have been tried.

551. WATER-COLOURS USED IN DRAWING.

Indian Ink.—The best is stamped with Chinese characters, breaks with a glossy fracture, and feels smooth when rubbed on the plate.

Hair Pencils are made of camel's-hair; if they come to a point, when moistened, without splitting, they are good.

Drawing Paper.—That made without any wire marks, and called wove paper, is the best; it is made of various sizes and thicknesses.

To make a good white.—Clarify white lead with white-wine vinegar. After the powder has settled, pour off the vinegar, put the powder into a glass of water, stir it, and pour the water off while it is white into another glass; when it is settled, pour off the water, and an excellent white will be obtained. To this add gum enough to give it a gloss.

552. DIRECTIONS FOR MIXED COLOURS.

Ash Colour.—Ceruse white, Keating's black and white, shaded with cherry-stone black.

Bay.—Lake and flake white, shaded with carmine; bistre and vermilion shaded with black.

Changeable Silk.—Red lead and masticot water, shaded with sap-green and verdigris.

Another.—Lake and yellow, shaded with lake and Prussian blue.

Cloud Colour.—Light masticot, or lake and white, shaded with blue verditer.

Another.—Constant white and Indian ink, and a little vermilion.

Another.—White, with a little lake and blue verditer, make a good cloud colour for that part next the horizon.

Crimson.—Lake and white, with a little vermilion, shaded with lake and carmine.

Flame Colour.—Vermilion and orpiment, heightened with white.

Another.—Gamboge, shaded with minium and red lead.

Flesh Colour.—Ceruse, red lead, and lake, for a swarthy complexion, and yellow ochre.

Another.—Constant white and a little carmine,

shaded with Spanish liquorice washed with carmine.

French Green.—Light pink and Dutch bice, shaded with green pink.

Glass Grey.—Ceruse, with a little blue of any kind.

Hair Colour.—Masticot, ochre, umber, ceruse, and cherry-stone black.

Lead Colour.—Indigo and white.

Light Blue.—Blue bice, heightened with flake white.

Another.—Blue verditer, and white of any sort, well ground.

Light Green.—Pink, smalt, and white.

Another.—Blue verditer and gamboge.

Another.—Gamboge and verdigris. This is chiefly used for the ground colours of trees, fields, &c.

Lion Tawney.—Red lead and masticot, shaded with umber.

Murrey.—Lake and white lead.

Orange.—Red lead and a little masticot, shaded with umber.

Orange Tawney.—Lake, light pink, a little masticot, shaded with gall-stone and lake.

Pearl Colour.—Carmine, a little white, shaded with lake.

Popinjay Green.—Green and masticot; or pink and a little indigo, shaded with indigo.

Purple.—Indigo, Spanish brown, and white; or blue bice, red and white lead; or blue bice and lake.

Russet.—Cherry-stone black and white.

Scarlet.—Red lead and lake, with or without vermilion.

Sea Green.—Bice, pink and white, shaded with pink.

Sky Colour.—Light masticot and white, for the lowest and lightest parts; second, red ink and white; third, blue bice and white; fourth, blue bice alone. These are all to be softened into one another at the edges, so as not to appear harsh.

Sky Colour for Drapery.—Blue bice and ceruse, or ultramarine and white, shaded with indigo.

Straw Colour.—Masticot and a very little lake, shaded with Dutch pink.

Yellow Colour.—Indigo, white, and lake; or fine Dutch bice and lake, shaded with indigo; or litmus smalt and bice, the latter predominant.

Water.—Blue and white, shaded with blue, and heightened with white.

Another.—Blue verdigris, shaded with indigo, and heightened with white.

To prevent Colours from Cracking.—Boil 2ozs.

of the best and clearest glue, with 1 pint of clear water, and a $\frac{1}{2}$ oz. of alum, till dissolved. With this temper those colours intended for the sky.

To make a Solution of Gum.—Dissolve 1oz. of white gum arabic, and a $\frac{1}{2}$ oz. of double refined sugar, in a quart of spring water; strain it through a piece of muslin, and bottle it to keep it free from dust.

To keep Flies from the Work.—Having prepared the gum water for the colours, add a little coloquintida.

To prepare Alum Water.—Take 4ozs. of alum, and 1 pint of spring water; boil it till the alum is thoroughly dissolved, and then filter it through blotting-paper.

To use Alum Water.—Before laying on the colours, take some of this water, hot, and with a sponge wet the back of the paper, which, if not good, must be wet three or four times, letting the paper dry each time before wetting it again. This will prevent the sinking of the colours, and give them additional lustre.

To make Lime Water.—Put unslacked lime in a well-glazed pan; cover it with pure water, and let it remain for one day. Then strain off the water. This water will change sap-green into blue.

553. TO PREPARE WASH COLOURS FOR MAPS.

Blue.—Dilute Saxon blue with water; or to the solution of litmus add distilled vinegar.

Green.—Dissolve verdigris in distilled water and add gum arabic. Or, dissolve sap-green in water and add gum.

Red.—Steep Brazil dust in vinegar, with alum. Or, dissolve litmus in water and add spirit of wine. Or, steep cochineal in water, strain, and add gum.

Yellow.—Dissolve gamboge in water; or French berries steeped in water, the liquor strained, and gum arabic added.

554. TO MIX WATER-COLOURS FOR ANIMALS.

Horses, black.—Black lightly laid on, shaded with Keating's black and bistre, heightened with masticot.

Horses, chestnut brown.—Red ochre and black mixed together, shaded with black, heightened with red ochre and white.

Horses, grey.—Black and white mixed, shaded

with black, white, and bistre ; heightened with pure water.

Lions.—Colour much in the same manner as horses, adding lake in the ground colour.

Bears.—Brown ochre, red ochre, and black, mixed ; shaded with bistre and ivory black.

Wolves.—Spanish liquorice and black, shaded with black.

Asses.—Black and white mixed ; or, add a little brown ochre, shaded with black.

Elephants.—Black, white, and Spanish liquorice, mixed ; shaded with black and bistre ; the inner part of the nose, vermilion and white, shaded with black.

Monkeys.—Dutch pink and black, heightened with masticot and white : the face, black and bistre mixed, as also their feet ; their bodies, shaded underneath with black and pink mixed with a little brown ochre.

555. FRUIT IN WATER COLOURS.

Apples.—Thin masticot mixed with verdigris, shaded with brown ochre.

Cherries.—Vermilion and lake, shaded with carmine, heightened with vermilion and white.

Grapes, blue.—Dark purple shaded with blue; the bloom, bice.

Grapes, white.—Verdigris and masticot mixed, shaded with thin verdigris heightened with masticot and white.

Peaches.—Thin masticot shaded with brown ochre; the bloom, lake heightened with white.

Pears.—Masticot deepened and mellowed with brown ochre.

Strawberries.—White; draw it over with vermilion and lake, shaded with fine lake, heightened with red lead and masticot mixed, and then with white; stipple them with white and thin lead.

556. TO PAINT FLOWERS.

Anemones.—A thin wash of gamboge shaded with bistre; or carmine and sap-green blended together. The stripes carmine, shaded with the same; indigo in the darkest parts, or stipple with it.

Leaves.—Sap green, shaded with indigo and French berries; the stalk brown.

Honeysuckles.—Inside of the petals, white shaded with sap-green, or gamboge and bistre.

The *insides* are to be shown by curling the leaves back at the ends, or by splitting them.

The *outsides*, a thin wash of carmine and lake mixed, shaded with carmine—indigo for the darkest shades.

Stalks.—Sap-green and carmine.

Leaves.—Sap-green, shaded with indigo and French berries.

Roses.—A light tint of pure carmine, over which another equally light of Peruvian blue; proceed with the darker shades of carmine of the best sort. In the darkest part of the flower add a little indigo to give a roundness. If the seeds are seen lay on gamboge, shaded with gall-stone.

Leaves.—Upper side, sap-green, shaded with indigo and French berries mixed; under-side, white indigo and sap green mixed, shaded with the same.

Stalks.—Sap-green and carmine, shaded with indigo.

Rose-buds.—A pale wash of carmine, shaded with a stronger wash of the same.

Stalks and leaves, sap green with a slight wash of carmine.

557. BIRDS IN WATER-COLOURS.

Eagles.—Black and brown, shaded with indigo; feathers heightened by brown ochre and white;

beak and claws saffron, shaded with bistre; eyes vermilion, heightened with masticot or saffron, shaded with vermilion.

Geese.—Ceruse shaded with black; legs, black; bill, red.

Owls.—Ochre mixed with white, in different shades; legs, yellow ochre.

Pheasants.—White and black mixed; legs, Dutch pink, shaded with black.

Swans.—White shaded with black; the legs and bills black; eyes yellow; a ball in the midst.

Turkeys.—Back, black and white mixed, shaded off to a white underneath; sprinkled and shaded with black.

558. LANDSCAPES IN WATER-COLOURS.

Sketch the outlines faintly with a black-lead pencil. Then colour.

Colours.—The most useful are: lake, burnt ochre, gamboge, indigo, light red, sepia, Prussian blue, sienna, and burnt umber.

The gray colour is made of burnt umber, indigo, and lake; each rubbed separately in a saucer, and then so mixed in a fourth saucer as to produce the exact colour—a warm gray. This is thinned for

the light tints, as sky and distances. Deeper is to be used for the shadows and near parts, softening with water till the exact effect is produced.

Buildings are sometimes tinted with a mixture of lake and gamboge. Burnt ochre is also used. The shadows have an excess of lake.

Breadths of Light are obtained by destroying the scattered lights with grays.

Clouds are produced by a thin mixture of indigo and lake. They should be tinted with sepia. The lower or horizontal clouds are tinged with ultramarine.

Figures are touched with lake and indigo.

Force is acquired by adding sepia to indigo, in the cold parts, and sepia with lake to the glowing parts.

Grass is washed with a mixture of burnt sienna, indigo, and gamboge; that in shadow has more indigo. Grass and bushes may be brought out by a tint of gamboge; distances may be heightened by lake.

Hills, retiring.—Tint the whole with weak blue; then the nearer ones with indigo and lake; add a little gamboge to the next, keeping one subordinate to the other; the most distant being lost in the aerial tints.

Land, distant.—Ultramarine and lake. Ground near is tinted with ochre.

Road and Paths.—A mixture of lake, burnt umber, and burnt sienna. It may be tinted with ochre.

Smoke.—Lake and indigo.

Trees, distant.—Ultramarine, with a wash of indigo, gamboge, and burnt sienna, tinted with gray. The middle distance trees have a thin wash of burnt sienna and gamboge. Nearer trees a wash of burnt sienna, indigo, and gamboge. In the shadows more indigo is used.

Opposing masses of trees are tinted with sepia and indigo.

Windows.—Indigo and burnt umber.

559. POTICHOMANIE.

This elegant accomplishment, which has become so extremely popular and fashionable, promises not only to supercede altogether many of those accomplishments which have hitherto absorbed the attention of our fair countrywomen, but to rank among the fine arts.

Advantages of this Art.—It possesses many advantages: and the process is simple and easily

acquired. It is an exceedingly pleasing and interesting employment, requiring no previous knowledge of drawing, yet affording abundant space for the exercise of the most exquisite taste. The time employed is richly repaid; the results produced are of actual value; articles of ornament and domestic utility being produced, in perfect imitation of the most beautiful Chinese and Japanese porcelain, of Sèvres and Dresden china, and of every form that is usual in the productions of the Ceramic Art. It furnishes an inexhaustible and inexpensive source for the production of useful and elegant presents, which will be carefully preserved as tokens of friendship, and as proofs of the taste and talent of the giver.

Articles necessary in the Art of Potichomanie.—Glass vases, (*Potiches en verre*,) of shapes suitable to the different orders of Chinese, Japanese, Etruscan, and French porcelain, Alumettes, &c.; cups, plates, &c., &c., of Sèvres and Dresden design. Sheets of coloured drawings or prints, characteristic representations of the designs or decorations suitable to every kind of porcelain and china. A bottle of liquid gum, and three or four hog-hair brushes. A bottle of varnish, and very fine pointed scissors for cutting out. An assortment of colours

for the foundation, in bottles. A packet of gold powder, and a glass vessel for diluting the colours.

Directions.—We will suppose the object selected for imitation to be a Chinese vase. After providing yourself with a plain glass vase, of the proper shape, you take your sheets of coloured prints on which are depicted subjects characteristic of that peculiar style. From these sheets you can select a great variety of designs, of the most varied character, on the arrangement and grouping of which you can exercise your own taste. After you have fully decided upon the arrangement of your drawings, cut them out accurately with a pair of scissors, then apply some liquid gum carefully over the coloured side of the drawings, and stick them on the inside of the vase, according to your own previous arrangement—pressing them down till they adhere closely, without any bubbles of air appearing between the glass and the drawings. When the drawings have had sufficient time to dry, take a fine brush and cover every part of them (without touching the glass) with a coat of parchment size or liquid gum, which prevents the oil colour (which is next applied) from sinking into or becoming absorbed by the paper. When the interior of the vase is perfectly dry, and any particles of gum size

that may have been left on the glass have been removed, your vase is ready for the final and most important process. You have now to tint the whole of the vase with a proper colour to give it the appearance of porcelain; for up to this time, you will recollect, it is but a glass vase, with a few coloured prints stuck thereon. Select from your stock of prepared colours, in bottles, the tint most appropriate to the kind of china you are imitating, (as we are now supposed to be making a Chinese vase, it will be of a greenish hue,) mix fully sufficient colour in a glass vessel, then pour the whole into the vase. Take now your vase in both hands, and turn it round continually in the same direction, until the colour is equally spread over the whole of the interior: when this is satisfactorily accomplished, pour back the remainder. If the prepared colour is too thick, add a little varnish to the mixture before applying it. If preferred, the colour may be laid on with a soft brush. Should the vase be intended to hold water, the interior must be well varnished after the above operations, or lined with zinc or tin foil. If the potichomanist wishes to decorate the mouth of his vase with a gold border, he can do so by mixing some gold powder in a few drops of the essence of lavender and some

varnish, applying it on the vase with a fine brush ; or he can purchase gold bands, already prepared for application, in varied sheets, suitable to the potichomanie designs. Potichomanists have found the art capable of greater results than the mere imitation of porcelain vases, by the introduction of glass panels (previously decorated with beautiful flowers on a white ground) into drawing-room doors, and also into walls which, being panel papered, offer opportunities of introducing centre pieces of the same character as the doors ; elegant chess and work-tables, folding and cheval-screens, panels for cabinets, chiffoniers and book-cases, slabs for pier and console-tables, glove-boxes, covers for books, music, albums, &c. The most common cause of failure is, that the drawings inside are not thoroughly pressed down.

560. COLOURING FOR CHEESE.

The colouring for cheese is, or at least should be, Spanish arnotto ; but as soon as colouring became general in this country, a colour of an adulterated kind was exposed for sale in almost every shop ; the weight of a guinea and a half of real Spanish arnotto is sufficient for a cheese of fifty

pounds' weight. If a considerable part of the cream of the night's milk be taken for butter, more colouring will be requisite. The leaner the cheese is, the more colouring it requires. The manner of using arnotto is to tie up, in a linen rag, the quantity deemed sufficient, and put into half a pint of warm water over night. This infusion is put into the tub of milk, in the morning, with the rennet infusion; dipping the rag into the milk, and rubbing it against the palm of the hand as long as any colour runs out.

561. TO SHARPEN EDGE TOOLS.

Take equal parts of flour of emery and crocus; make into a paste with sweet oil; have now a piece of buck-skin, (hemlock tan,) tack it by each end on a piece of board, with the grain uppermost; then on this spread a little of the paste, and sharpen your tools on it. You will, indeed, be astonished at the effect. Try it.

562. BLUE COMPOSITION FOR DYEING.

Take equal parts of vitriol and indigo; powder them very finely, separately, and mix.

563. TO GILD LETTERS ON VELLUM OR PAPER.

Letters written on vellum or paper are gilded in three ways; in the first, a little size is mixed with the ink, and the letters are written as usual; when they are dry, a slight degree of stickiness is produced by breathing on them, upon which the gold leaf is immediately applied, and by a little pressure may be made to adhere with sufficient firmness. In the second method, some white lead or chalk is ground up with strong size, and the letters are made with this by means of a brush; when the mixture is almost dry, the gold leaf may be laid on, and afterwards burnished. The last method is to mix up some gold powder with size, and make the letters of this by means of a brush.

564. TO PRESERVE STRAWBERRY PLANTS.

Sir Joseph Banks, from a variety of experiments, and the experience of many years, recommends a general revival of the now almost obsolete practice of laying straw under strawberry plants, when the fruit begins to swell; by which means

the roots are shaded from the sun, the waste of moisture by evaporation prevented, the leaning fruit kept from damage by resting on the ground, particularly in wet weather, and much labour in watering saved. Twenty trusses of long straw are sufficient for 1800 feet of plants.

565. MANAGEMENT OF STRAWBERRY PLANTS.

On the management of strawberries in June and July, the future prosperity of them greatly depends; and if each plant has not been kept separate, by cutting off the runners, they will be in a state of confusion, and you will find three different sorts of plants. 1. Old plants, whose roots are turned black, hard, and woody. 2. Young plants, not strong enough to flower. 3. Flowering plants, which ought only to be there, and perhaps not many of them. Before the time of flowering is quite over, examine them, and pull up every old plant which has not flowered; for, if once they have omitted to flower, you may depend upon it they never will produce any after, being too old, and past bearing; but to be fully convinced, leave

two or three, set a stick to them, and observe them the next year. If the young plants, runners of last year, be too thick, take some of them away, and do not leave them nearer than a foot of the scarlet, alpines, and wood, and fifteen or sixteen inches of all the larger sorts; and in the first rainy weather in July or August, take them all up, and make a fresh plantation with them, and they will be very strong plants for flowering next year. Old beds, even if the plants be kept single at their proper distance, examine, and pull all the old plants which have not flowered. When the fruit is nearly all gathered, examine them again, and cut off the runners; but if you want to make a fresh plantation, leave some of the two first, and cut off all the rest. Then stir up the ground with a trowel, or three-pronged fork, and in August they will be fit to transplant. If you have omitted in July, do not fail in August, that the runners may make good roots, to be transplanted in September; for, if later, the worms will draw them out of the ground, and the frost afterwards will prevent them from striking root; the consequence of which is, their not flowering the next spring; and you will lose a year.

566. THE LANGUAGE OF FLOWERS.

What each flower enumerated, signifies, when sent to a friend or lover.

Almond, flowering—Concealed love.

Althea, Frutex—I am deeply in love.

Amaranth—Immortality, or piety.

Anemone—Fading hope.

Arbor-Vitæ—Unchanging friendship.

Auricula, Scarlet—Pride. You are proud.

Bachelor's Button—Hope in love.

Balm—I long for your society.

Balsamine—Impatience ; or, pray come.

Bay Leaf—I change but in dying.

Box—I believe in your constancy.

Buttercup—Riches. You are rich.

Calla Ethiopica—Magnificent beauty.

Carnation—Pride and beauty.

Camelia Japonica—Surpassing excellence.

Cedar—Think of me.

China Aster—Caprice.

Cypress—Despair, and without hope.

Dahlia—Dignity—I will sustain it.

Daisy—Youthful beauty.

Dandelion—Coquetry, I accuse you of.

Eglantine—I wound to heal.

Forget-me-not—True love for ever.

Fox-glove—Insincerity. You are false.

Geranium—Gentility and elegance.

Gilly-Flower—Thou art fair.

Golden Rod—Encouragement. You will succeed.

Grass—Submission.

Heart's Ease—Love in idleness.

Heliotrope—Devotion. Let us pray for each other.

Hellebore—Calumny. You have listened.

Hollyhock—Ambition. I seek glory.

Honeysuckle—Dost thou love me?

Houstonia—Content ever with thee.

Hyacinth, Purple—Sorrow. I am sad.

Hydrangea—Heartlessness.

Ivy—Wedded love. We are happy.

Jasmine, White—I desire a return of my affection.

Larkspur—Haughtiness.

Laurel—Ambition. I will win.

Laurustinus—A token. Pray remember.

Lavender—Acknowledgment.

Lilac—Fastidiousness.

Lily, White—Purity and beauty.

Magnolia—You are beautiful.

Marigold—Jealousy—I have cause.

- Mignonette*—I live for thee.
Moss—Patience, or pray wait.
Oak-Leaf—Courage. I will endure.
Passion-Flower—Piety. Trust in God.
Periwinkle—Memory. Never forget.
Pink—Household love. I am at home.
Poppy—Forgetfulness.
Primrose—Neglected merit.
Rose—Love, or I love you.
Rue—Disdain. Go: never return.
Saffron—Marriage—when?
Snow-drop—Faithful in adversity.
Thyme—Thriftiness. I am diligent.
Tulip—Beautiful eyes. Look on me.
Violet—I dream of thee.
Willow—Forsaken—never more.
Wheat—Prosperity—I wish thee.
Yew—Penitence. I am sorry.

567. FRENCH POLISH FOR BOOTS, &c.

Logwood chips, half a pound; glue, quarter of a pound; indigo, pounded very fine, quarter of an ounce; soft soap, quarter of an ounce; isinglass, quarter of an ounce; boil these ingredients in two pints of vinegar and one of water, during ten min-

utes after ebullition, then strain the liquid. When cold it is fit for use. To apply the French polish, the dirt must be washed from the boots, &c. ; when these are quite dry, the liquid polish is put on with a bit of sponge.

568. AN ILLUMINOUS BOTTLE.

By putting a piece of phosphorus, the size of a pea, into a phial, and adding boiling oil until the bottle is a third full, a luminous bottle is formed ; for, on taking out the cork, to admit atmospheric air, the empty space in the bottle will become luminous. Whenever the stopper is taken out in the night, sufficient light will be evolved to show the hour upon a watch ; and if care be taken to keep it in general well closed, it will preserve its illuminative power for several months.

569. CHINESE METHOD OF MENDING CHINA.

Take a piece of flint-glass, beat it to a fine powder, and grind it well with the white of an egg, and it joins china without riveting, so that no art can break it in the same place. You are to

observe, that the composition is to be ground extremely fine.

570. TO MAKE STILTON CHEESE.

Take the night's cream, and put it to the morning's new milk, with the rennet; when the curd is come it is not to be broken, as is done with other cheeses, but take it out with a soil dish all together, and place it on a sieve to drain gradually, and, as it drains, keep gradually pressing it, till it becomes firm and dry; then place it in a wooden hoop; afterwards to be kept dry on boards, turned frequently, with cloth-binders round it, which are to be tightened as occasion requires. In some dairies the cheeses, after being taken out of the wooden hoop, are bound tight round with a cloth, which cloth is changed every day until the cheese becomes firm enough to support itself; after the cloth is taken away, they are rubbed every day all over, for two or three months, with a brush; and if the weather is damp or moist, twice a day; and even before the cloth is taken off, the top and bottom are well rubbed every day.

571. TO PRESERVE BEER.

In a cask containing eighteen gallons of beer,

becoming vapid, put a pint of ground malt, suspended in a bag, and close the bung perfectly; the beer will be improved during the whole time of drawing it for use.

572. TO RECOVER SOUR BEER.

When beer has become sour, put into the barrel some oyster-shells, calcined to whiteness, or a little fine chalk or whiting. Any of these will correct the acidity, and make the beer brisk and sparkling; but it cannot be kept long after these additions are made.

573. CARVACROL—THE NEW REMEDY FOR TOOTH-ACHE.

Dr. Bushman gives (in the *Medical Times*) the following account of this new compound, which, though well known in Germany as a quick and effectual cure for one of the most worrying ills "that flesh is heir to," is now for the first time published in England. Carvacrol is an oily liquid, with a strong taste and unpleasant odor. It may be made by the action of iodine on oil of caraway or on camphor. A few drops applied on cotton

wool (to a decayed and painful tooth) give immediate relief. Carvacrol much resembles creosote in appearance, and is used in similar cases of tooth-ache, but its effect is much more speedy and certain.

574. CAMPHOR CERATE FOR CHAPPED HANDS.

The following receipt was given to the contributor by a maid of honour to Queen Victoria. It is an excellent one. Scrape into an earthen vessel one ounce and a half of spermaceti and half an ounce of white wax; add six drachms of pounded camphor, and four tablespoonsful of the best olive oil. Let it stand near the fire till it dissolves, stirring it well when liquid. Before the hands are washed, rub them thoroughly with a little of the cerate, then wash them as usual. Putting the cerate on before retiring answers very well. This quantity costs about twenty-five cents, and will last three winters. The vessel it is kept in should be covered, to prevent evaporation.

575. THE WAY TO WEALTH.

“The way to wealth,” says Doctor Franklin, “is as plain as the way to market.”

Many men, however, either miss the way, or stumble and fall on the road.

Fortune, they say, is a fickle dame—full of her freaks and caprices; who blindly distributes her favours without the slightest discrimination. So inconstant, so wavering is she represented, that her most faithful votaries can place no reliance on her promises.

Disappointment, they tell us, is the lot of those who make offerings at her shrine. Now, all this is a vile slander upon the dear blind lady.

Although wealth often appears the result of mere accident, or a fortunate concurrence of favourable circumstances, without any exertion of skill or foresight, yet every man of sound health and unimpaired mind may become wealthy, if he takes the proper steps.

Foremost in the list of requisites, are honesty and strict integrity in every transaction of life. Let a man have the reputation of being fair and upright in his dealings, and he will possess the confidence of all who know him.

Without these qualities, every other merit will prove unavailing. Ask concerning a man, “Is he active and capable?” Yes. “Industrious, temperate, and regular in his habits?” O yes.

“Is he honest? is he trustworthy?” Why, as to that, I am sorry to say that he is not to be trusted; he wants watching; he is a little tricky, and will take an undue advantage, if he can.

“Then I will have nothing to do with him:” will be the invariable reply.

Next, let us consider the advantages of a cautious circumspection in our intercourse with the world. Slowness of belief, and a proper distrust are essential to success.

The credulous and confiding are ever the dupes of knaves and imposters. Ask those who have lost their property how it happened, and you will find in most cases it has been owing to misplaced confidence.

One has lost by endorsing; another by crediting; another by false representations; all of which a little more foresight and a little more distrust would have prevented.

In the affairs of this world, men are not saved by faith, but by the want of it.

Judge of men by what they do, not by what they say. Believe in looks rather than in words.

Before trusting a man, before putting it in his power to cause you a loss, possess yourself of every available information relative to him.

Learn his history, his habits, inclinations and propensities ; his reputation for honesty, industry, frugality, and punctuality ; his prospects, resources, supports, advantages and disadvantages ; his intentions and motives of action ; who are his friends and enemies, and what are his good or bad qualities.

You may learn a man's good qualities and advantages from his friends—his bad qualities and disadvantages from his enemies. Make due allowance for exaggeration in both.

Finally, examine carefully before engaging in any thing, and act with energy afterward. Have the hundred eyes of Argus beforehand, and the hundred hands of Briarius afterward.

576. MAXIMS BY DR. FRANKLIN ON THE WAY TO WEALTH.

God helps those who help themselves.

Many words won't fill a bushel.

Sloth, like rust, consumes faster than labour wears.

The key often used is always bright.

Dost thou love life? Then do not squander time, for that is the stuff life is made of.

The sleeping fox catches no poultry.

There will be time enough for sleep, in the grave.

If time be of all things the most precious, wasting time must be the greatest prodigality.

Lost time is never found again.

What we call time enough, always proves little enough.

Sloth makes all things difficult, but industry all easy.

He that riseth late must trot all day, and shall scarce overtake his business at night.

Laziness travels so slowly, that poverty soon overtakes him.

Drive thy business, lest it drive thee.

Early to bed and early to rise, makes a man healthy, wealthy, and wise.

Industry need not wish.

He that lives upon hope, will die fasting.

There are no gains without pains.

Help, hands, for I have no lands.

He that hath a trade, hath an estate, and he that hath a calling, hath an office of profit and honour; but the trade must be worked at, and the calling well followed, or neither will enable us to pay our taxes.

The drone in the hive makes no honey.

At the working-man's house hunger looks in, but does not enter.

Industry pays debts, but despair increaseth them.

Diligence is the mother of good luck.

God gives all things to industry.

Plough deep while sluggards sleep, and you will have corn to sell and to keep.

One to-day is worth two to-morrow.

Have you somewhat to do to-morrow, do it to-day.

If you were a servant, would you not be ashamed that a good master should catch you idle? Are you, then, your own master? be ashamed to catch yourself idle.

The cat in gloves catches no mice.

Light strokes fell great oaks.

By diligence and patience, the mouse ate into the cable.

Employ thy time well, if thou meanest to gain leisure; and since thou art not sure of a minute, throw not away an hour.

A life of leisure and a life of laziness, are two things.

Troubles spring from idleness, and grievous toils from needless ease.

Many would live by their wits, without labour, but they break for want of stock.

Industry gives comfort, plenty, and respect.

Now I have a sheep and a cow, everybody bids
me good-morrow.

I never saw an oft-removed tree,

Nor yet an oft-removed family,

That throve so well as one that settled be.

Three removes are as bad as a fire.

Keep thy shop, and thy shop will keep thee.

If you would have your business done, go; if
not, send.

He that by the plough would thrive,

Himself must either hold or drive.

The eye of the master will do more work than
both his hands.

Want of care does us more damage than want
of knowledge.

Not to oversee workmen, is to leave them your
purse open.

In the affairs of the world, men are saved not
by faith, but for the want of it.

Learning is to the studious, and riches to the
careful, as well as power to the bold, and heaven
to the virtuous.

If you would have a faithful servant, and one
that you like, serve yourself.

A little neglect may breed great mischief.
For want of a nail the shoe was lost ;
For want of a shoe the horse was lost ;
For want of a horse the rider was lost—
Being overtaken and slain by the enemy.

If a man save not as he gets, he may keep his nose to the grindstone all his life, and die not worth a groat.

A fat kitchen makes a lean will.
Many estates are spent in the getting,
Since women for tea, forsook spinning and knitting,
And men for punch, forsook hewing and splitting.

The Indians did not make Spain rich, because her out-goes were greater than her incomes.

What maintains one vice would bring up two children.

Many a little makes a mickle.

Beware of little expenses ; a small leak will sink a great ship.

Who dainties love, shall beggars prove.

Fools make feasts, and wise men eat them.

Buy what thou dost not need, and ere long thou shalt sell thy necessaries.

At a great bargain pause awhile.

It is foolish to lay out money in the purchase of repentance.

Wise men learn by other's harms, fools scarcely by their own.

Silks and satins, scarlet and velvets, put out the kitchen fire.

A ploughman on his legs, is higher than a gentleman on his knees.

Always taking out of the meal-tub, and never putting in, soon comes to the bottom.

When the well is dry we know the worth of water.

If you would know the value of money, try to borrow.

Fond pride of dress is sure a very curse ;

Ere fancy you consult, consult your purse.

Pride is as loud a beggar as want, and a great deal more saucy.

Vessels large may venture more,

But little boats should keep the shore.

Pride that shines on vanity sups on contempt.

Pride breakfasted with plenty, dined with poverty, and supped with infamy.

What is a butterfly ? At best

He's but a caterpillar dress'd ;

The gaudy fop's his picture just.

The second vice is lying ; the first is running in debt.

Lying rides upon debt's back.

It is hard for an empty bag to stand upright.

Creditors have better memories than debtors.

Creditors are a superstitious sect, great observers of set days and times.

Those have a short Lent who owe money to be paid at Easter.

The borrower is a slave to the lender, and the debtor to the creditor.

For age and want save while you may,

No morning sun lasts a whole day.

Get what you can, and what you get hold ;

'Tis the stone that will turn all your lead into gold.

Experience keeps a dear school ; but fools will learn in no other, and scarce in that ; for we may give advice, but we cannot give conduct.

They that will not be counseled cannot be helped.

Distrust and caution are the parents of security.

After feasts made, the maker shakes his head.

There is neither honour nor gain got in dealing with a villain.

Visits should be like a winter's day, short.

A house without woman and firelight,

Is like a body without soul or sprite.

Light purse, heavy heart.

Ne'er take a wife till thou hast a house (and a fire) to put her in.

Great talkers, little doers.

Relation without friendship, friendship without power, power without will, will without effect, effect without profit, and profit without virtue, are not worth a farthing.

He has changed his one-eyed horse for a blind one.

578. EXCELLENT PASTE.

Excellent paste for fruit or meat pies may be made with two-thirds of wheat flower, one-third of the flour of boiled potatoes, and some butter or dripping; the whole being brought to a proper consistence with warm water, and a small quantity of yeast added when lightness is desired. This will also make very pleasant cakes for breakfast, and may be made with or without spices, fruit, &c.

Picnic Biscuits.—Take two ounces of fresh butter, and well work it with a pound of flour. Mix thoroughly with it half a salt-spoonful of pure carbonate of soda; two ounces of sugar; mingle thoroughly with the flour; make up the paste with spoonful of milk—it will require scarcely a quarter of a pint. Knead smooth, roll

a quarter of an inch thick, cut in rounds about the size of the top of a small wine-glass; roll these out thin, prick them well, lay them on lightly floured tins, and bake in a gentle oven until crisp; when cold put into dry canisters. Thin cream used instead of milk, in the paste, will enrich the biscuits. Caraway seeds or ginger can be added, to vary these at pleasure.

579. BLACK CAKE.

Beat separately the whites and yolks of three eggs. Mix half a pound of butter with one pound of flour, one tumbler of milk, one tumbler of molasses, one pound of sugar. Then put in the eggs and one and one-half teaspoonful of soda. Wine, currants, raisins and citron to your taste.

580. MAIZE CAKE.

Take six eggs, a paper of Oswego corn starch, one pound of loaf sugar, half pound of butter, half teacup of milk, half a teaspoon of soda, one teaspoon of cream of tartar, the grated rind of the lemon; dissolve the soda in half the milk, and add it the last thing. Bake in an oven as quick as

you can make it without burning. It is a very delicate cake to bake well. Use flat pans, a little deeper than Spanish bun pans, and put paper over the top.

581. COMPOSITION CAKE.

Take three pounds of flour, half pound of butter, one and three-quarter pounds of sugar, three eggs—beat the eggs—add half a pint of yeast to them, half a pint of new milk, three spoonsful of rose-water, and a little cinnamon and cloves; put the butter in the flour and half the sugar, the other half mix with the eggs; make a hole in the flour, pour the ingredients into it; set it to lighten in the morning by the fire; after it is made out into rolls, you may put it into tins, and set it before the fire for an hour or two; when sufficiently risen, bake it in rather a slow oven.

582. GINGER BISCUITS AND CAKES.

Work into small crumbs three ounces of butter, two pounds of flour, add three ounces of powdered sugar and two of ginger, in fine powder; knead into a stiff paste, with new milk, roll thin, cut out with a cutter; bake in a slow oven until crisp through; keep of a pale colour.

583. TO SILVER IRON WITH SILVER FOIL.

This is the method now adopted all over Canada and the United States for silvering iron for carriages, cutters, &c. You may get the silver foil, (which is sometimes called silver plate,) of any thickness you please, and by so doing, have the iron plated either light or heavy. If you get small iron rods plated they will cost you from four to five cents per inch: you may do it yourself for one-quarter the price.

Directions in full.—First polish the iron you are about to plate, then wet it with soldering fluid, (receipt No. 21,) then give it a coat of solder, (receipt No. 22;) this is done by laying a piece of solder on the iron, and spreading it over with a heated soldering iron; or it is sometimes done by having the solder melted, and then dipping the iron to be silvered into it. After the iron is coated by either of these methods, with solder, some workmen propose to then place it in the fire for a few moments, that the coating of solder may be thereby made smoother. The next thing then to be done is to dampen with soldering-fluid, then lay on your silver foil, and rub it over with a soldering iron heated to such a degree as to melt the solder, and thereby fasten

the plate at once to the iron, or rather to the solder on the iron; or else as some workmen prefer, have your soldering iron only hot enough to slightly stick the foil to the solder, and then place the article in the fire until the solder melts, and thereby the foil becomes firmly united with the iron. Whichever of these methods you adopt, as soon as the silver is united to the iron, you must then at once proceed to polish it, which is done by taking a piece of coarse cloth, dipping it in whiting, previously dampened with alcohol, and rubbing it well over the surface until it is well polished. If at any time, as sometimes will happen, the plate of silver becomes stained so that you cannot polish it, wet it with the fluid, put another plate of silver foil over it, and proceed to fasten it to the iron as you did with the first plate, then polish it with the whiting, &c. Some merely spit on the whiting instead of dampening it with the alcohol, but it is not so speedy a method. A friend of mine prefers heating the iron, then applying the soldering fluid, then the coat of solder, and then laying on the silver foil, and pressing it on by means of a cloth, which he does by taking a piece of cloth about four inches wide and eight or ten inches long, catching one end in each hand and

pressing and rubbing it from side to side, and round the article until the silver foil is firmly united, and then polishing as mentioned above. Some prefer plating the iron first with tin foil, then covering the tin with silver foil, and it is a good plan. A very good plan, if it is plane work (not carved) you are doing, is to take a piece of board one or two inches wide, and six or eight inches long, and lay it over the cloth you are polishing with, which gives you a greater purchase. I never knew this receipt to be sold for less than from \$24 to \$60.



TO ALL WHO HAVE PURCHASED THIS
WORK.

You are now in possession of about all the latest and most useful receipts that are in the country; many of which are now being sold, frequently, for from \$5 to \$10 and \$20 each; and if you will now be wise, do that which will be to your own interest, allow no man to see this work, but keep the receipts profoundly secret, except as you sell them. You may dispose of enough of them, written off, every year you have the book, to amount to twenty times the price of it.

INDEX.

A.

	PAGE.
Agent, disinfecting.....	178
Age, a horse's.....	144
Animals, to paint.....	256
Arts, elegant.....	241

B.

Balls, portable.....	179
Beer, to preserve, &c.....	275, 276
Birds, to paint.....	259
Biscuits, soda.....	173
Black, iron-work.....	65
Blacking, oil-paste.....	66
“ water-proof.....	66
“ best varnish.....	67
Books, to gild.....	16
Bottle, an illuminous.....	274
Brass, &c., to gild.....	14
“ to make.....	183
“ red, to make.....	80
Bronzing.....	87

C.

Candles, imitation wax.....	97
“ lard.....	185
Cakes.....	288, 289

	PAGE.
Cakes, honey, &c.....	172, 174
" &c., paste.....	287
Carvacrol, for toothache.....	276
Cement, fire and water-proof.....	30
" cast-iron.....	74
" crockery.....	95
" for china, &c.....	95
" fire-proof, &c.....	177
" Roman, or mastic.....	179
" a choice.....	180
" for belts.....	213
Cerate, camphor.....	277
Cheese, to make, &c.....	238 to 241
" " Stilton.....	275
" coloring for.....	266
China, mended as by Chinese..	274
Chlorine.....	90
Cloth, to make water-proof.....	94
" " rain-proof.....	180
Colours, water.....	251
" mixing.....	252
Copper, &c., to gild.....	14
" coating with.....	17
" blanchèd.....	78
" Chinese white.....	79
Cologne.....	70
Coating for gold varnish.....	116
Colour, a mahogany.....	181
Complexion, for the.....	219
Cream, substitute for.....	175
Currier's receipts....	209, 210

D.

Diaphanie, or glass staining.....	246
-----------------------------------	-----

	PAGE.
Drinks	36 to 59
Drowning, in case of	212
Dye, hair.....	96
Dyeing cloth, &c.....	99 to 107
" blue composition for.....	267

F.

Flowers, to paint.....	258
" the language of.....	271
Fluid, gold plating.....	12
" silver "	13
" quicksilver plating.....	13
" soldering	22
" writing	32
" burning	25, 26
Fruit painting.....	257

G.

Gilding, instructions for.....	221
" on paper, &c.....	268
Glass, to gild.....	15
" staining.....	107 to 116
" " imitation.....	246
" to bore.....	183
Glue, liquid.....	215
Gold, mock.....	77
" manheim	79
" imitations	80
" a variety of.....	84 to 86
" ethereal, solution of.....	231
Grease for axles, &c.....	176
Gunpowder	29
Gun-barrels, to brown.....	215

	H.	PAGE.
Hair, grow and curl.....		68
“ to curl.....		176
“ restorative.....		203, 207
Hardening, case.....		74
Hats, to bleach straw.....		106
Honey.....		28, 29
Horn, to soften.....		81
“ moulds of.....		82
Horse-training, genuine... ..		133 to 141
“ “ mandies.....		146

I.

Inks, various.....		31 to 36
Iron, to copper.. ..		17
“ to silver.....		20
“ “ plate.....		22, 23
“ to prepare, to copper.....		20
“ to plate.....		290
“ to soften.....		75
“ cast, to weld.....		73
Ivory, imitation.....		82

J.

Japanning.....		92
----------------	--	----

L.

Lacquers.....		60 to 62
Lacquer for brass.....		226
Lacquering, to clean brass for.....		227
Ladies, for.....		171
Landscapes.....		260
Leather, water-proof for.....		214
Looking-glasses, to silver.....		23, 24

INDEX.

297

M.

PAGE.

Matches, to make.....	30
Maps, colours for	256
Marrow, ox, for hair	70
Mahegany, to imitate.....	128
" spots from.....	215
Marble, &., to clean.....	216
Maxims, Dr. Franklin's.....	280
Metal, Britannia.....	78
" expanding.....	79
" Queen's.....	79
Meats, to preserve.	175
Medicines for man.....	185 to 209
" " horses, &c	147 to 171
Moulds and dyes.....	81
Mushrooms, to produce.....	174

O.

Oil, fish, for paint.....	227
Oils, hair.....	69, 70

P.

Painting, oriental.....	5
" Grecian	242
" in milk.....	229
" photocromatic, or Canadian oil.....	218
" transfer	6-8
Paints, various.....	117 to 122
" compound	122 to 129
Paint, patent yellow.....	128
" black walnut	129
Pain killer.....	213
Paste for razor strops.....	214
Pewter, two kinds.....	78

	PAGE.
Pickling	130 to 133
Pictures, to clean.....	235
Pie, mince.....	172
Plants, strawberry	268, 269
Plating gold and silver.....	9 to 12
Platinum, imitation.....	79
Polish, French, to use.....	223
“ “ for boots	273
“ varnish	234
“ for old furniture.....	68
Polishes, various.....	71, 72
Porcelain, to gild.....	15
Potichomanie.....	262
Powder, ink.....	33
“ gold.....	83
“ copper.....	86
Pork, to preserve, &c.....	176, 177
Poison for bugs.....	178
Poisons, antidotes for.....	210

R.

Rats, &c., to kill.....	207
Roses, cream of.....	220

S.

Sail cloth, to paint.....	217
Secret, anglers.....	95
Sheep, staggers in.....	214
Silvering, directions for.....	121
“ amalgam.....	17
Silver, imitations.....	80
“ German.....	183
“ to clean.....	216

	PAGE.
Size, common.....	86
“ gold.....	91
Silk, water-proof.....	94
Solution, cyanide of copper.....	19
Solder, for tin.....	22
Solders, various.....	75 to 77
Soap, French chemical.....	31
“ shaving.....	68
“ hard, and bar.....	70
“ chemical.....	183
Soaps, various.....	184, 185
Steel, to gild.....	14
“ “ weld.....	72
“ “ soften.....	75
Stain, asphaltum.....	67
Stains, for violins.....	97, 98
“ various.....	181, 182
Steak, beef.....	173
Starch, gum-arabic.....	178

T.

Teeth, for the.....	176
Tomback.....	80
Tools, to sharpen.....	267
Tricks, jockey.....	141 to 146

V.

Varnishes.....	3, 4
“.....	59, 60
“.....	62-65
“.....	90, 91
“.....	182-217
“ harness.....	65, 66

	PAGE.
Varnish, blacking.....	67
" Dr. John's.....	87
" for drawings.....	235
" " glass.....	235
Varnishes.....	236, 237
Vinegars	26-48

W.

Walnut, black, to imitate.....	129
Wainscoat, to imitate.....	128
Wax, grafting.....	175
Wealth, the way to.....	277
Whitewash, brilliant	59
Whiskers, &c., to promote	200
Wine, morella.....	96
" from cider.....	174
Wood, satin, to imitate.....	128

Y.

Yeast.....	41
" domestic.....	174





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